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ABSTRACT

These conference proceedings deal with vocational assessment procedures which school psychologists can use with handicapped secondary school students, and the role that psychologists can play in this process. The keynote address proposes six basic premises for secondary school psychological services and describes basic vocational assessment models and goals. Special reports follow, describing vocational evaluation procedures for use with students experiencing a wide variety of handicapping conditions, including mental retardation, learning disabilities, emotional disturbances, hearing and vision impairments, and orthopedic impairments. Vocational assessment for handicapped black students is also discussed. Other topics include prevocational assessment for elementary, middle, and junior high school students, school psychology in community colleges, the United States Employment Service's aptitude testing batteries and handicapped students, vocational interest assessment procedures, measurement of adaptive behavior and social competence skills, and integrating vocational assessment data into school psychological evaluations. The proceedings also contain the text of an address by Dr. John Guidubaldi, President, National Association of School Psychologists, entitled "Advice for an Evolving Specialty in a Changing Society." The appendices discuss roles for school psychology in vocational education programs for handicapped students and contain the conference program, an annotated bibliography on vocational assessment for handicapped persons, and selected references on vocational/secondary school psychology. (JAC)

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Conference Proceedings

SECONDARY SCHOOL PSYCHOLOGICAL SERVICES: Focus on Vocational Assessment Procedures for Handicapped Students

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

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INTRODUCTION

This conference was the first in the nation to be devoted exclusively to vocational assessment procedures which school psychologists can use with handicapped secondary students. It was sponsored by Virginia Tech in cooperation with the Virginia Department of Education, the Virginia Association of School Psychologists, and the National Committee on Vocational School Psychology of the National Association of School Psychologists. The conference was supported by a vocational education grant for the purpose of familiarizing school psychologists with vocational assessment procedures for handicapped students, and the roles that psychologists can play in this process. It is the hope of the conference planning committee that these activities will facilitate the expansion of secondary school psychological services in general, and especially in vocational assessment programs for handicapped persons.

Approximately 200 school psychologists attended the May 5, 1982 conference on the Virginia Tech campus. They included psychologists employed in the public schools, vocational education regional centers, medical schools, rehabilitation centers, university school psychology training programs, university counselor education programs, community colleges, state department personnel in school psychology and vocational education, and corrections facilities. ***It is important to note that all of these settings employ school psychologists to work with occupational training programs for youth and adults.***

The conference began with Dr. Thomas Hohenshil proposing six basic premises for secondary school psychological services and describing basic vocational assessment models and goals. He was followed by 10 special interest groups describing vocational evaluation procedures for use with students experiencing a wide variety of handicapping conditions. The special interest groups were followed by Dr. John Guidubaldi, President of the National Association of School Psychologists, who discussed some of the major trends in school psychology relating to secondary schools.

The vocational aspects of psychological assessment are gaining importance as increasing numbers of handicapped students enter our secondary schools. It is our view, and that of many of our colleagues, that there should be a vocational component in *every* secondary psychological evaluation. It is our hope that these conference proceedings will assist those who attended the conference, as well as those who were unable to attend, to expand the range and quality of vocational assessment procedures designed to facilitate the career development of handicapped secondary students.

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KEYNOTE ADDRESS

SECONDARY SCHOOL PSYCHOLOGICAL SERVICES:
Vocational Assessment Procedures for Handicapped Students

*Thomas H. Hohenshil**

It has been my contention for nearly a decade that provision for the career development of handicapped secondary students has been, and remains one of the fundamental shortcomings of American education. As a result of the Education for All Handicapped Children Act (P.L. 94-142), and several other significant pieces of federal and state legislation, more handicapped youth are enrolled in school, and they are staying longer. Rather than dropping out, or being "dropped out" prior to secondary school, handicapped students are entering our high schools in increasing numbers. Developing and implementing the appropriate kinds of secondary education and support services for them is troubling schools across the nation (Heller, 1981; Hohenshil, 1982).

National concern for the handicapped and their career development is growing as these students leave the protected educational environment and enter the competitive employment market. Research indicates that the gap between school and the world of work is frequently much wider for handicapped than nonhandicapped individuals (Fagan, 1981; Meers, 1980). They, more than any other group need assistance in bridging this gap. To leave the career development of handicapped students to chance, as has been the case all too often in the past, frequently commits them to unproportionately high rates of unemployment and underemployment, which result in social and economic dependence. The economic cost of dependency among unemployed disabled persons in this country has been estimated at more than $115 billion per year. The social cost is equally staggering (Batsche, 1981; Hohenshil, 1982; Razeghi, 1979, Weisgerber, Dahl, & Appleby, 1980).

This conference was designed to provide school psychologists with additional skills to facilitate the career development of secondary handicapped students. Although we certainly recognize that a number of support services are necessary to assist handicapped students in the area of career development (counseling, assessment, information, consultation, etc.), this conference is specifically devoted to the topic of vocational assessment and the roles that school psychologists can play in this important process. This is not to downgrade the other services that school psychologists can provide to handicapped students (for a review of those services please refer to pp. 77-84). However, assessment has been a traditional function of school psychological services, and the vocational aspects of psychological assessment are gaining increasing importance. It is my view and the view of an increasing number of our colleagues, that there should be a vocational component in ***every*** secondary psychological evaluation. It is our opinion that ***comprehensive*** psychological evaluation must deal with the vocational aspects of personality and educational development.

Six Premises for Secondary School Psychology

Before discussing the basic components of the vocational assessment process for handicapped secondary students, I would like to take a few minutes to propose six basic premises for secondary school psychological services. I believe they will set the course for the future development of psychological services at the secondary level in the years ahead. Some of these premises are accepted practice, while others may be new and somewhat controversial.

Premise #1

Most school psychologists are employed to provide services for all students who need them in a school system, K-12. This generalist position has been supported by practically every university training program, state department of education, and professional organization.

Premise #2

The vast majority of psychological services are currently provided at the elementary school level. Every major study on the role of the school psychologist indicates that the overwhelming majority of ***services*** are provided at the K-6 level, often to the virtual exclusion of secondary psychological services. Kramer and Nagel (1980) found that the great majority of ***research*** in school psychology is also focused upon elementary aged children. The fact that this overwhelming concentration of services upon the K-6 group has and continues to occur is certainly no great revelation to practitioners. It is clear that training programs focus on this group, that the majority of services are targeted on this group, and that research efforts are concentrated at this level. As Guidubaldi (1982) recently pointed out, one could easily contend that school psychologists have been generalists in rhetoric only.

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*Thomas H. Hohenshil is professor of counseling/vocational school psychology at Virginia Tech. He is also chairperson of the National Committee on Vocational School Psychology for the National Association of School Psychologists.

Premise #3

School psychological services, like other educational services, should be in support of the primary emphases of the different levels of the educational system. This is such a critical point that I would like to briefly review those emphases with you:

Elementary School - The basic emphasis of the elementary school has traditionally been the acquisition of the basic skills of reading, writing, arithmetic, and social and citizenship skills.

Junior High School - The primary emphasis of the junior high school has traditionally been exploration of various curricular and career fields to assist students in the decision making process as they enter high school.

High School - The major emphasis of the high school has traditionally been preparation for entry level employment, or preparation for the next level of the educational system. This might occur through vocational education programs, college preparatory programs, or some combination of the two.

Unfortunately, many special educators and school psychologists have performed as if the junior high and high school emphases don't exist for handicapped youth. However, as a result of several pieces of federal and state legislation, the schools are increasing their holding power. This is resulting in more and more handicapped students entering our high schools, rather than dropping out prior to reaching that level. As noted previously, resolving the appropriate kinds of secondary education and support services to provide for them is troubling schools across the nation.

Traditionally, the goals of most secondary special education programs have been similar to those provided in elementary schools. Many special educators seem to believe that if handicapped students don't learn to read, write, and do arithmetic in elementary school, then they should get another six years of the same. It is my contention that we simply have to devote more attention to exploration and preparation at the junior and senior high levels.

If you ask parents what they want for their handicapped children as a result of attending 12 years of schooling, they will tell you that they want them to be independent, self supporting, self directing individuals. It is virtually impossible for this to happen in our society unless a person is *occupationally* independent. An emphasis upon "academic" skills alone will not achieve this goal. Occupational independence for many handicapped students will not happen unless considerable attention is focused upon the acquisition of occupational skills in our high schools.

Premise #4

The vast majority of the students requiring special education and psychological services in elementary schools ***today*** will be enrolled in some type of vocational education program while they are in high school. Therefore, the major thrust of secondary psychological services should be in support of students enrolled in special vocational programs or mainstreamed into regular vocational programs. To believe otherwise is to ignore what is happening and what will continue to happen through the 1980's regarding the secondary education of handicapped students.

Premise #5

Just as specialized knowledge and skills are necessary to function effectively in elementary special education, specialized knowledge and skills are just as necessary in order to provide effective psychological services in secondary vocational programs designed for handicapped students. We cannot expect to transplant the same knowledge and skill competencies used at the elementary level to the secondary level if we are to provide effective services. The characteristics of the students are different; their educational, social, and emotional needs are different; and secondary education has different procedures and goals than those of elementary education.

Psychologists who have practiced extensively in secondary schools have noted significant differences in their services. For example, they are rarely the first to provide psychological services to handicapped high school students. By the time they reach high school, there may already be four or five psychological reports in the files. What will we get by re-evaluation using the same traditional procedures and instruments? If we haven't figured out why students haven't acquired the basic academic skills after nine or 10 years, perhaps we should recommend placement in programs which will prepare them for occupational independence. Special educators are clearly recognizing the need for this and have begun to emphasize vocational preparation to a greater extent. The use of various types of vocational assessment techniques is a step in the right direction for school psychologists. Those experienced in secondary school psychology know this. They also know that their counseling, consultation, and inservice education skills are in significantly greater demand at the secondary level.

Premise #6

In summary, it is reasonable to conclude that the expansion of secondary school psychology in the 1980's will be almost synonomous with the practice of what we have called ***vocational school psychology*** since 1974. Most of the students that we served in elementary schools will be in vocational education, therefore, this is where our services will be critically needed.

This is not to say that we shouldn't provide services to handicapped students in general or college preparatory programs. Nor is it to say that we shouldn't provide services to students who are not classified under the special education umbrella. Surely services to the general secondary student body are important. However, there must be a central reason or rationale for the expansion of secondary school psychological services in the coming decades. It seems to me that the central thrust of secondary psychological services should be in support of programs for handicapped students - and that the vast majority of these students will be enrolled in various types of career preparation programs in order to acquire job skills for use upon graduation. School psychologists have practiced in the elementary schools for decades to facilitate the educational, personal, and social development of exceptional individuals. ***Our expansion into secondary vocational programs for handicapped students is a natural extension of services as more of the students we were instrumental in placing in elementary special education programs progress into secondary schools.*** The reason school psychological services haven't had much impact on the secondary level is because we have been out of "sync" with the major thrust of the high school. A major thrust in high schools is ***career preparation,*** while our major emphasis in the past has been to assist students acquire the basic ***academic*** skills, regardless of their educational level.

Are School Psychologists Interested in Secondary Services?

Given that the ***need*** for secondary psychological services is expanding significantly, two critical questions have to be asked at this point: (1) How actively involved are school psychologists in the provision of secondary services at the present time? and (2) Do school psychologists believe they should provide expanded services at the secondary level in the future?

John Shepard (1982), a doctoral candidate at Virginia Tech recently completed a national study of practicing school psychologists in an effort to answer these two questions. Shepard drew a random sample of 364 practicing school psychologists from the membership list of the National Association of School Psychologists (NASP). He sent each of these psychologists an extensive questionnaire which included items dealing with: (1) vocational appraisal procedures, (2) career counseling and development activities, and (3) consultation and liaison activities. An outstanding response rate of 84% was received, which I might add is more than double that received in the last national role and function study conducted by NASP.

Present Activities

Shepard's results clearly indicated that the vast majority of the school psychologists sampled indicated very little current involvement in vocational appraisal; career counseling and development activities; and career consultation activities. His results parallel my own observations while working with various state organizations and state departments of education over the last few years.

Future Importance

In spite of the fact that most of the psychologists indicated little present involvement in these areas, it is important to note that these same psychologists were highly positive in relation to their views of future importance. For example, fully 91% indicated that school psychologists should significantly expand their services in all three of the major areas targeted in Shepard's study. Just as significantly (attention trainers), 90% believed they are not adequately prepared to provide comprehensive services in vocational education programs for handicapped students at the secondary level. This was a sobering, but not surprising finding.

More specifically related to the topic of this conference, the clear majority of the respondents:

1. Indicated that we should administer psychological evaluations to handicapped pupils who are candidates for vocational education.
2. Believed that we should interpret results of vocational aptitude and interest tests to students, parents, and teachers.
3. Indicated that school psychologists should explore vocational interests, goals, and aspirations with students as a ***routine*** part of psychological evaluations.
4. Believed that we should make recommendations for the placement of students in various vocational education programs.

The overall results of Shepard's study of practicing school psychologists closely parallel those of a similar study conducted a few years ago with the leadership of NASP (Pfeffer, 1978), as well as those of Philip Murray (1975), former president of the Virginia Association of School Psychologists. In each case, psychologists nationally, as well as Virginia school psychologists support more active involvement in career development programs for handicapped secondary students. There is little question that school psychological services will continue to expand at the secondary level. Past presidents of NASP and others have described vocational school psychology as a major thrust of the profession during this decade (Fagan, 1981; Grimes, 1981; Guidubaldi, 1982; Trachtman, 1981).

Framework for Vocational Assessment

Given the above as a rationale for the further development and future directions for secondary school psychological services, the remainder of this paper will be devoted to the presentation of a general framework for vocational assessment. Little attention will be devoted to the enumeration of specific vocational assessment instruments and their validity and reliability for particular groups of handicapped students. This information will be provided later by the other programs in the conference.

When discussing vocational assessment procedures with school psychologists in the past, many thought that we would try to persuade them to administer and interpret the same instruments that counselors use. This couldn't be further from the truth. What we are really proposing are very different procedures and instruments than school counselors employ. What we found in Virginia and other states in my recent research with a subcommittee of our state legislature is that not much is happening with the vocational assessment of handicapped secondary students. We found throughout the nation that the vast majority of these students are not receiving high quality vocational assessment services. It is my opinion that school psychologists with our good training in working with handicapped students, in general, can provide this service much better than other support service personnel, most of whom have little or no special training to work effectively with handicapped students.

Career Planning Process

The basic purpose of vocational assessment procedures for handicapped students is to provide information and assistance in the career planning process. The basic model is the same whether students make the career decisions for themselves, or whether they are made for them by placement committees. As shown in Figure 1, the career planning process can be broken down into the following seven basic steps:

Figure 1
CAREER PLANNING MODEL

Step 1 - Determine Decision to be Made
- Depends upon student's level of educational and psychological development

Step 2 - Collect Appropriate Information
- Internal Information
    - Interests
    - Aptitudes
    - Values
    - Aspirations
    - Achievement
    - Personality
    - Small/large motor coordination
- External Information
    - Types of occupations
    - Personal requirements for entry
    - Educational requirements
    - Economic & social consequences
    - Relation of curriculum to various career options
    - Application process for entrance

Step 3 - Generate Alternative Career Options

Step 4 - Select Primary Alternative & Specify Secondary Alternatives

Step 5 - Reality Testing in Sheltered Environment
- School courses
- Co-op programs
- Simulated work experience
- Observation

Step 6 - Evaluate Results of Reality Testing

Step 7 - Continue to Pursue Primary Alternative

or

Return to Step 4 to consider secondary career alternatives

One of the most important components of this model is Step I - determining the decision to be made with a particular handicapped student. If a handicapped student is eight years of age, regardless of the handicapping condition, the decision to be made is ***not*** what the student will do for the rest of his/her life. At this level more career and self awareness activities would probably be most appropriate. If the student is 14-21 years of age, specific career exploration and career preparation activities might be most appropriate. Obviously, the specific decision to be made depends upon such factors as age, level of mental ability, social and emotional maturity, occupational experience, etc.

Vocational assessment information is particularly useful in Step 2 of the model - collection of appropriate information. Vocational assessment procedures and instruments generally focus upon the internal information aspects of Step 2 by helping individuals (and placement committees) learn more about student interests, aptitudes, values, small and large motor coordination, achievement, and personality - all important aspects of the career planning process. In fact, the quality of information developed through Step 2 clearly determines the quality of career options in Step 3. Vocational assessment information also provides valuable data to evaluate the results of reality testing included in Step 6 of the model. Certainly the more individuals know about themselves, the better the career decisions they make. Cutting down on the error factor in career decisions results in a reduction of frustration and sporatic occupational and curriculum change. If students, handicapped or otherwise, are knowledgeable about themselves and various career alternatives, research indicates they will make more realistic career choices. The same is true for decisions by placement committees and their recommendations for future education and training (Anderson, 1982).

Uses of Vocational Assessment

As noted in Figure 2, there are three basic uses for vocational assessment information when assisting clients. They can be viewed on a continuum in the following manner;

Figure 2
USES OF VOCATIONAL ASSESSMENT

Generation of Alternatives — Selection from Alternatives — Confirmation

Some handicapped students literally have no occupational goals. For these students (and their placement committees) a primary purpose of vocational assessment is to help ***generate*** alternative courses of action (potential career alternatives). A second use of vocational assessment information deals with the ***selection*** of occupational (or training) alternatives. Some students have multiple career goals, may have tried out three or four occupational alternatives, and need some help choosing from among them. A third use is for ***confirmation.*** Students may seek out vocational assessment to merely confirm a decision they have tentatively made. This type of model may also be viewed as a continuum of stages which everyone goes through. Students (handicapped or not) need to generate occupational alternatives in the career planning process, to select from those alternatives, and to confirm that the alternative selected is appropriate for the individual.

Vocational Assessment Techniques

There are a variety of vocational assessment techniques which psychologists may use to develop information about students in the career planning process. These techniques are presented in Figure 3:

Figure 3
VOCATIONAL ASSESSMENT TECHNIQUES

Work Experience
Simulated Work Experience
Work Sampling
Performance Tests
Behavioral Observation
Interviewing
Paper and Pencil Tests

Work experience is one of the best vocational assessment techniques. What better way is there to determine whether students like to do something, whether they are good at it, and whether they would like to continue to pursue an occupation through specific job training. Unfortunately, we have found that many handicapped students have little actual work experience. ***Simulated work experience*** is another excellent vocational evaluation technique. Here students are placed in an environment which simulates actual working conditions in an occupation or group of occupations. Many of the career exploration programs at the junior and early senior high levels are simulated work experiences. Some would also suggest that vocational education programs are really simulated work experience for those students who have not had an opportunity to participate in career exploration experiences.

A third technique is ***work sampling.*** Basically, work sampling is selecting certain job functions from an occupation or group of occupations and having the student perform these under observation by a trained examiner. There are a variety of commercial and locally constructed work sampling programs which are currently in use. ***Performance tests,*** such as the performance section of the General Aptitude Test Battery, the Crawford Small Parts Assembly Test, and even the performance sections of the revised Wechsler scales can be used to acquire important information for the career planning process. Indeed, much data derived from a traditional psychological evaluation, if properly interpreted, are vocationally relevant.

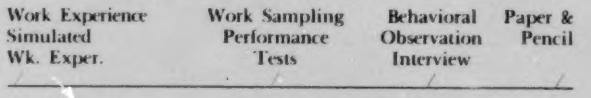
Behavioral observation and ***interviewing*** are two good vocational assessment techniques. I recommend that psychologists include a vocationally oriented clinical interview as part of every psychological evaluation. Talk with students about their work experiences, their occupational likes and dislikes, course preferences, leisure time activities, and career aspirations. This is an excellent technique to help determine where a student is in the career planning process, as well as the formulation of vocational assessment goals. Vocational assessment goals are dramatically different for students who have little idea of what they might do, then they are for those who have significant work experience in occupations they would like to pursue in the future. The behavioral observations of parents and teachers are also excellent sources of data. For example, it is important to ascertain if the interview data with the student parallel the observations of teachers and parents. If not, then this certainly has relevance for determining additional vocational evaluation and exploration techniques.

Group psychometric tests (paper and pencil) are what most people think about first when vocational assessment is mentioned. These include such vocational aptitude and interest inventories as the Differential Aptitude Test, the Strong Campbell Interest Inventory, the Kuder Occupational Interest Survey, and the Self Directed Search, to mention a few. One of the most obvious shortcomings of these techniques is that the reading level may be too high for many handicapped students. In these instances it may be necessary to use some of the non-reading inventories that are available. For students who are orthopedically handicapped, paper and pencil instruments generally do not provide enough useful information about vocational aptitudes. Here, work sampling procedures and performance tests are more useful. Certainly, the specific vocational evaluation techniques selected by the psychologist depend upon the presenting handicapping condition.

Assessment Continuum

Another way to conceptualize a framework for vocational assessment is to use an experiential continuum as depicted in Figure 4:

Figure 4
EXPERIENTIAL CONTINUUM



Work experience and simulated work experience are obviously the most closely related to actual occupational performance. If you wish, we could say they have the highest degree of face validity. Many in vocational rehabilitation would suggest that work experience, simulated work experience, and work sampling procedures also have the highest predictive validity. However, empirical research data to support the reliability and validity of work sampling procedures is not as convincing as would be hoped. One could also construct another continuum of time and expense for the above techniques. Here, work experience, simulated work experience, and work sampling procedures are much more expensive in terms of time and personnel. For example, it might take several days or longer to cycle a student through all of the work samples included in some of the commercial work sampling batteries. Generally, the most expensive and time consuming procedures should be reserved for those with the highest degree of disability. In many of these instances, the client should be actually observed performing a wide variety of job functions before an accurate job training recommendation can be made.

Proposed Assessment Battery

Following is a proposed vocational evaluation battery for use with handicapped secondary students. Each component of the battery will not be dealt with in depth since other programs at this conference are targeted upon the various areas. Figures 5 depicts such a battery:

Figure 5
PROPOSED APPRAISAL BATTERY

Mental Ability
Achievement
Small/Large Motor Coordination
Personality - Social Maturity
Interest
Aptitude
Career Maturity

As with any psychological evaluation, the specific components of a battery depend upon the presenting handicapping condition. Clearly mental ability and achievement are extremely important data in the career planning process. I would be the last to suggest that you dump your Wechsler scales out the window as you enter the high school parking lot. The subscale information produced on the Wechsler scales can be extremely important from an occupational perspective. It is essential that we know mental ability and achievement levels in order to make relevant occupational recommendations for training.

Small and large motor coordination are also vitally important. Such measures are necessary in order to predict probable success in nearly all of the vocational areas, whether it be secretarial, auto mechanics, cosmetology, or vocational agriculture. Work sampling and various types of performance tests should be included as part of vocational assessment batteries, in addition to such traditional techniques as the Bender.

Personality and social maturity are necessary job skills in some occupations, if not all to some degree. In fact, research indicates that most people lose their jobs not because they lack specific occupational skills, but because they cannot get along with their coworkers and supervisors. Thus, personality and social maturity assessment are necessary ingredients of a comprehensive, vocationally oriented battery.

Interest and aptitude assessment are efforts to determine vocational likes and dislikes, as well as to determine what abilities may be developed with further training. In some instances, these may be assessed through traditional paper and pencil psychometric techniques. The determining factor is whether or not a particular handicapping condition interferes with the proper use of these instruments. Low reading level, various sensory deficits, and orthopedic handicaps may require the use of such "non-traditional" methods as work sampling and various types of behavioral observation. Most work sampling techniques include items to assess vocational interests as well as vocational aptitudes. This is not to say that school psychologists should be proficient in the administration of time consuming working sampling techniques, but they should know enough about them to recommend certain procedures and be able to integrate the results into appropriate placement plans for handicapped students.

Career maturity is similar to the concept of mental maturity. Career maturity instruments are designed to assess students' levels of self knowledge, career information, and career decision making skills in relation to others of their age group. In general, most career maturity inventories lack norms on students with various types of handicapping conditions. Therefore, they should be used with caution.

As mentioned before, a vocationally oriented clinical interview should be used to help determine the goals of vocational assessment. Not all students will require the entire battery. The experienced clinician selects and chooses particular techniques for a particular student.

These are the basic components of a comprehensive vocational appraisal battery that school psychologists might use in the secondary schools. Notice that many of the components are the same as those you are probably already using to assess academic skills and aptitudes. What is different is that the traditional procedures should be interpreted with emphasis upon their implications for career planning and placement.

Conclusion

Now for the $64,000 question. Who does what in the vocational assessment process? My answer to that is a firm and conclusive, "it depends." It depends upon the characteristics of your school system; it depends upon the kinds of qualifications that your staff has; it depends on your qualifications as well as those of other support personnel and instructional staff; it depends upon the financial resources of your school system; and it depends upon the availability of services from your community agencies.

I happen to believe that school psychologists should be actively involved in secondary vocational assessment programs. Various general models and procedures have been presented in this paper. Each will be expanded upon in succeeding papers from this conference. It is our hope that this information will help you to expand effective vocational assessment procedures for handicapped students in your secondary schools.

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SPECIAL INTEREST GROUPS

15

Vocational Assessment Procedures for the Mentally Retarded

*Douglas T. Brown & Harriet Cobb**

INTRODUCTION

Vocational services to mentally retarded students in secondary settings are beginning to be developed in school systems throughout the country. In fact, special education services to secondary retarded students are a relatively new phenomenon. During the past ten years, significant numbers of community based programs have been developed for the retarded as a result of deinstitutionalization efforts. This, coupled with the advent of PL 94-142, has increased the pressure to provide educationally relevant experiences for the retarded population at the secondary level. The general cognitive characteristics of the retarded, however, pose significant problems in the utilization of psychometric techniques. In addition, traditional vocational assessment instruments are often not applicable to this population. This has resulted in the collection of psychoeducational information of dubious value in the development of curricular interventions.

While a significant body of research exists describing vocational approaches for the severe and profoundly mentally retarded, the application of these approaches in school settings has been minimal. In addition, clear relationships between cognitive and motor skills, and specific career choices have not been developed adequately. If vocational programming for the retarded is to be adequately developed at the secondary level, more comprehensive assessment practices will be necessary. This means that current instrumentation will have to be extrapolated and modified for use with the retarded. Further, new instrumentation will have to be developed which relates specific characteristics of this population to the array of vocational opportunities realistically available in the community.

Aside from an overall reduced level of cognitive functioning, other characteristics exist within retarded adolescents which make vocational education programming difficult. For example, severely restricted attention spans and increased levels of hyperactivity make all educational programming difficult. Retarded adolescents have few academic skills and often exhibit auditory and perceptual deficits. Affectively, they are significantly behind their normal peer group. The more severely and profoundly retarded often lack fundamental self-care and safety skills. Expressive language deficits are quite common. Thus, any number of different cognitive/language/motoric problems may occur in various combinations within this group. This requires that the assessment and programming efforts be individualized and tailored to the specific deficits present.

Assessment

Psychometric tests, in particular IQ tests, have not been useful in predicting ultimate job success (Stephens & Peck, 1968), although they do correlate with work potential (Gold, 1973). One of the problems with intelligence tests has been that of utilizing the global IQ score for predicting job success rather than evaluating specific abilities required to perform a specific task.

Manual dexterity has been found to correlate with work competence, but initial scores on most tasks are not good predictors of performance after training (Wolfensberger, 1967). Wolfensberger reviewed several studies indicating that the retarded often score lower on such tasks than persons of normal intelligence, but that these differences diminish with training. This is a common finding when working with the retarded [illegible] has profound implications for how assessment results are used.

In a comparison of the ***AAMD Adaptive Behavior Scale,*** the ***Behavioral Characteristics Progressive Scale,*** and the **McCarron-Dial Work Evaluation System** (Carsrud, Carsrud, Dodd, Thompson, & Gray, 1981), it was determined that the McCarron-Dial system predicted vocational aptitudes of mentally retarded persons most accurately. The ***San Francisco Vocational Competency Scale,*** which has a .86 correlation with actual vocational performance was used as the dependent variable.

Malgady, Barcher, Towner, and Davis (1979) found in studies of their rating scale, which measured maladaptive language behavior, that adaptive behavior can be an important factor in job success. Irritating verbal mannerisms were rated as more likely to result in termination of a worker than were poor communication skills. Both of these factors correlated with the ***San Francisco Vocational Competency Scale.*** Malgady, et al. (1979) concluded that social language skills may be the single most important factor in work success for the retarded.

Sali and Amir (1971) found that perseverance was the most highly rated personality characteristic for retarded clients' success. Although many studies link job satisfaction to adjustment (Becker, 1973), early attempts to use interest inventories with the retarded have not produced substantial success. The reading level required for most interest inventories is too high for this population. Further, interests of the retarded are easily affected by prior experience. This suggests that training as a process should be designed so that it will help the retarded develop a wider range of interests (Wolfensberger, 1967). Stodden and Lazar (1979) found that a prevocational exploratory experience for educable mentally retarded adolescents related significantly to positive changes in the relationships between vocational interests and stability. In another study (Becker, Schull, & Cambell, 1981), a reading-free vocational interest inventory was developed and its predictive ability assessed. Becker, et al. (1981) studied 50 TMR adults over a five year period and found that: (1) the TMR's could discriminate between occupational likes and dislikes when using a pictorial inventory interest assessment technique, (2) a positive relationship existed between expressed and inventoried interests, and (3) inventoried interest was independent of chronological age and IQ. Walls and Werner (1977) evaluated 39 behavioral checklists containing items related to prevocational, vocational, occupational, and work behavior. The checklists were classified into eight subclasses of vocational behavior: prevocational skills, job seeking skills, interview skills, job related skills, union/financial security skills, work performance skills, and specific job skills. The checklists were then classified by objectivity (degree of behavioral specificity), scope (number of items for sub-class), observation setting, and prescriptive/descriptive nature. None of the individual behavioral checklists contained both high objectivity and a wide scope. The authors recommended selecting a checklist on the basis of the populations served and using it as one of the tools in the assessment and curriculum planning for the retarded.

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Work samples have been used for decades, and have their proponents and detractors. Gannaway and Sink (1981) reviewed several studies of work samples, and concluded that major criticisms of this technique have been directed toward their lack of reliability and predictive validity. This has been primarily due to the problems associated with standardization. Additionally, the development of work samples is a costly and lengthy process. The technique does not address factors such as attitude, competition, and monetary reward which can greatly affect performance (Huddle, 1967). Furthermore, work samples tend to measure the products of prior learning (Irvin and Halpern, 1979).

In a review of the research on the ***Singer Vocational Evaluation System*** (VES), Gannaway and Sink (1981) concluded that although the face and content validity were established, the adequacy of predictive validation for use with MR's is still in question. In a review of commercial work sampling systems, Cobb (1981) recommended close examination of this approach with special needs learners because of the expense and process limitations. For example, the lack of realistic work conditions when administered in a lab or school setting can lead to erroneous conclusions. In addition, the task within the sampling procedure may not reflect skills required by jobs that are available in a particular community.

Based on their review of four commonly used work sample batteries with the retarded, Stodden, Casale, and Schwartz (1977) recommended that work samples be used primarily as assessment and training tools rather than as instruments predictive of job success. They suggest that other variables such as interest level and local employment conditions be utilized in evaluating work potential for the retarded person.

Another approach which uses the work sample technique in the context of a training program for the severely retarded has been described by Irvin, Gersten, Taylor, Close, and Bellamy (1981), employing the ***Training Performance Scale.*** This scale is a process measurement approach which includes both training and correction procedures. The retarded individual's ability to benefit from various training strategies is measured with the technique. It has been found to have both psychometric adequacy and practical utility.

Based on the literature reviewed, a comprehensive vocational assessment of a mentally retarded person could include several components, many of which are identical to those included in the assessment of nonhandicapped individuals (Appendix A). These would include: (1) vocational interest, either manifestly expressed or inventoried, (2) vocational aptitude for a specific area of employment, and (3) vocational achievement as measured by what the individual has learned after appropriate training.

In addition to specific vocational components, there are other related abilities that are essential to a comprehensive vocational assessment. These include: (1) the person's basic academic skills in the areas of vocabulary, reading, math, and writing. In addition, both receptive and expressive language skills are highly relevant to most occupations and should be addressed in the evaluation; (2) The adaptive behavior pattern in the domains of self care, social skills, and independent living skills is critical. The personal habits and skills of an individual, whether retarded or not, are clearly related to job success. As has been pointed out, maladaptive language behavior is very likely to result in termination for the worker. (3) The learning style, and, in particular, the condition under which the person is most productive are essential for a meaningful assessment. This includes the reinforcement schedule and types of reinforcements that have a proven "track record" with the person. (4) Physical characteristics which include stamina, motor skills, special health conditions, and other handicapping conditions must all be evaluated.

The most sensible assessment procedure involves a cooperative effort among the school psychologist, special educator, and vocational educator. Although this appears to be a logical direction in which to move, it is not uncommon for the vocational teacher to be resistant to accepting a mentally retarded student in class. Conversely, special education teachers are often unaware of the inner workings of vocational education classrooms. The whole process of vocational assessment is quite new to many school psychologists and is perceived by some as outside of their realm of potential practice. Thus, in many school divisions there continues to be a lack of leadership and coordinated effort in dealing with vocational assessment and placement for the mentally retarded. As is typical in other areas of education, the scientist/practitioner gap still exists in terms of the translation of research data to practice. The school psychologist, with his/her knowledge of handicapped children, systems analysis skills, and emerging skills in the area of vocational education can be in a position to bridge this gap.

Beginning with the parent interview, the school psychologist can start the process of vocational assessment. Obtaining information regarding what the parent has in mind for the child's future is important. The expectations they have regarding the child's independent living skills are also significant. Whether or not the parents plan on having the child live with them into adulthood is also critical. If not, the types of alternative placements that are being considered are clearly relevant. An appraisal of parent attitudes toward work and work activities is critical to the evaluation. It is well documented that parents of retarded children and adults tend to be overprotective and do not necessarily reinforce behaviors which are related to success in the vocational settings. Parental involvement in the job training and placement process has been advocated as a way to increase success (Gragert, 1962).

Assessment of the "ecosystem" is as important as assessment of the person. It includes a close examination of the classroom workshop, or job placement environment (Appendix B). Several questions might be asked in this regard: (1) Do the vocational tasks require reading? At what level? (2) Do the tasks require complex perceptual motor skills? (3) What reinforcers and incentives are currently being used? (4) How much physical stamina is required? What are the work hours and how much work is expected? (5) What related skills are necessary for job success (e.g., telling time, making change, using transportation? (6) How supervised is the situation? If a classroom, are there aides? If a work setting, will a mentally retarded person be on his/her own for long periods of time? (7) How willing and able is the potential teacher/employer to make modifications for the mentally retarded? What are their current attitudes toward this population? What previous experience and knowledge does the employer have of the mentally retarded? (8) What are the conditions of the home environment that may have impact on the success of a given job placement? What, if any, changes could be made to increase the chance for success (such as demonstrations of confidence on the part of the parents)? (9) Historically, what attitudes have been expressed by the parents regarding work and the usefulness of work? (10) What are the major objectives of the "normalization program" for this person? For example, is the expectation that total independent functioning be achieved at some future time?

In summary, a comprehensive vocational assessment of the mentally retarded should answer specific questions relating to both the person and the ecosystem. (1) What are the current skills of the student (vocational, academic, adaptive, personal)? (2) Under what circumstances can these skills be increased? (3) What choices of vocational tasks exist in the individual vocational training? (4) How can the student best be taught and how can the tasks be modified so that he/she can succeed?

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APPENDIX A

Vocational Assessment for the Mentally Retarded
(Medical-Sociological-Psychological-Educational/Vocational)

ASSESS:
- Medical Information
- Relevant Family Information
- Intellectual Information
- Learning Styles/Reinforcement History
- Academic Skills (Basic Ed, Language Skills)
- Perceptual/Motor Skills
- Functional Life Skills (Adaptive Behavior)
- Intrapersonal Characteristics/Social Skills
- Vocational Interests/Awareness
- Vocational Skills

USING:
- Medical Records
- Client Interview
- Parent Interview
- Behavior Checklists/Observations
- Interest Inventory
- Dexterity/Perceptual Motor Tests
- Psychological Tests
- Achievement Tests
- Job/Course "Tryouts"
- Work Samples

TO RECOMMEND:
- Specific Training Areas (Work Adjustment, Vocational Course)
- Vocational Program Placement Level
- Teaching Techniques/Curriculum Modifications
- Additional Family/Community Support Services

APPENDIX B

Assessment of the "System"
(Classroom, Workshop, Job Placement Environment)

1. Do the vocational tasks require reading?
2. Do the tasks require complex perceptual motor skills?
3. What reinforcers and incentives are currently being used?
4. How much physical stamina is required?
5. What related skills are necessary for job success (e.g., telling time, making change, using transportation)?
6. How supervised is the situation?
7. How willing and able is the potential teacher/employer to make modifications for the mentally retarded?
8. What are the major objectives of the "normalization program" for this person?

IMPLICATIONS:

—Parent Counseling
—Inservice
—Program Development

Vocational Assessment for Learning Disabled Students

*Lillien S. Brown**

Learning Disabled (LD) students cover a wide spectrum of individual conditions and needs. IQs, which on individual tests like the WISC-R account for 50% of an individual's success in school, range from low average (or in some systems, mentally deficient) to superior. Profile scatter may range from retarded to genius across skills. Behaviors may range from passive helplessness to angry, aggressive acting-out to pleasantly appropriate. Career goals and expectations may range from none to professional levels. There is no cookbook solution or single test battery that will provide the answers to the questions addressed by vocational evaluations for such a heterogeneous group.

Career Development and Learning Disabilities

From a developmental perspective, adolescence is the time for establishing an independent self identity, including a vocational identity. It is a time for increasing awareness of self (e.g., individual abilities, interests and values) and of learning about varied facets of the world of work.

According to Super's (1980) career development theory, most individuals at ages 13-14 are expected to be finishing the initial Growth Stage. They are in the Capacity Substage where personal abilities and job requirements are given increased consideration over the earlier primacy of personal needs and likes. Although there is a significant amount of overlap between stages and much individual variance, the Exploration Stage covers at least the next nine years. There is a Tentative Substage, ages 15-17, where tentative career choices are made, followed by a Transition Substage, ages 18-20, where the reality of what is possible is given more weight.

According to Super & Hall, (1978), the longitudinal Career Pattern Study and the National Assessment of Educational Progress have shown that normal "high school students have not explored the world of work adequately, lack needed information and typically do not know what information to seek or how to seek it" (p. 346). For handicapped students, the process may be even less adequate. Some individuals may never adequately resolve these developmental tasks. Goldberg (1981) states that "the problem of separation, independence, body image, sexual indentity, aggression, and depression must be resolved before a vocational decision can be made. Amid all the turmoil of adolescence, the able bodied, disabled youth cannot be expected to make a realistic choice without a great deal of help" (p. 69).

Bingham (1981) suggested that learning disabled students may have special difficulty in processing and interpreting career information; they may miss the point because of distorted perception or cognition. Jordaan (cited in Super & Hall, 1978) theorized that educational decision points (in the exploratory period) produce ambiguity, stress, and, at times, boredom. If this stress or other conflict does not produce withdrawal, curiosity is likely to result in exploration (Graham, Super & Bowlesby, Note 1). Bingham (1981) suggested, however, that LD students' lesser ability to tolerate ambiguity may result in impulsive behavior or early closure rather than constructive and continuing exploration. A history of school related failures may make LD students less able to cope with the built-in stress of decision making.

Limited research suggests that there are differences in career maturity between LD and non-LD students and between LD students in different types of placements (Bingham, 1975, 1978, 1980; Kendall, 1980, 1981). A study of LD young adults indicated that they had lower level jobs and were significantly less satisfied with their employment than were their non-LD peers (White, Schumaker, Warner, Alley and Deshler, Note 2).

Vocational Assessment and Learning Disabilities

In determining what to evaluate in vocational assessment, it is worthwhile to consider individual LD characteristics that tend to interfere with vocational adjustment and productivity. Gillet (1980) suggested a list including: "impulsivity, clumsiness, difficulties in problem-solving, short attention span, motor problems, and temporal dysfunctioning" (p. 87). Hullinger (1981) adds charactertistics such as spatial disorientation, inaccuracy in hearing, tactile discrimination difficulties, visual dysfunction, and poor social awareness. The simple fact of academic underachievement may rule out success in many fields. Mikulecky (1981) investigated occupational reading requirements and found that most workers were called on to read both more and better than many regular high school students.

LD students generally may be more lacking in task approach skills than in ability per se (Hallahan & Kneedler, Note 3). Some adolescents do not improve their problem solving abilities over time (Stone, cited in Grossman, 1982). Ackerman, Dykeman and Peters (1976) found on a four-year follow-up of LD and non-LD populations at age 14 that under-achieving LD students often could not or would not use memory and problem solving strategies. They could, however, learn meaningful life skills which did not require conscious effort or strategies. Process vocational evaluations and observations within the vocational classroom or on the job can help to clarify whether lack of success is a lack of knowing the appropriate strategy (i.e., a lack of ability or information, or a lack in knowing how to apply it effectively).

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Most workers are fired not because of their lack of skill or ability, but due "to inability to get along with others, to deal with authority or to acquire socially acceptable work habits" (Hooper, 1980, p. 280). Many employers train workers for specific job duties, but they do not often offer training in social skills. Cook (1979) listed research regarding LD deficits in social perception skills: inability to perceive social situations accurately, to emphasize, to identify appropriate models, to interpret context clues, or to pick up subtle social clues, to interpret non-verbal communication (i.e., body language, tone of voice), or to know of their own capacity for change. The same kinds of behaviors that cause LD students problems in school are likely to cause problems on the job.

At the secondary level, LD and ED students are often difficult to differentiate since they share many characteristics. Even in cases of unequivocally defined cerebral dysfunction, "at lease mild socioemotional disturbances" are common (Rourke, 1975). As adolescents, secondary students are in the developmental stage described by many as one of "storm and stress" even for normal students; however, Oldham (1980) has effectively challenged the normalcy of symptoms beyond mild depression and anxiety or mild disagreement with authority figures. The point here is that personality functioning must be carefully evaluated. If significant problems exist, they should receive the same attention they would at a later age. Research indicates that adolescents don't "grow out of it."

The role of parents of learning disabled students is important, but mostly unexplored (Clark, Note 4). Young adult LDs have expressed dissatisfaction with their family relationships (White, et al., Note 2). Achieving independence and becoming autonomous individuals are generally more difficult for handicapped students, especially if parents (or other "teachers") are over-protective (Cruickshank, Morse & Johns, 1980). Career attitude maturity seems significantly influenced by students' perceptions of parental attitudes and behaviors (Miller, 1978). The opinions, expectations, and behaviors of parents and other relevant adults, especially for younger or less mature high school students, is very important in determining student outcomes.

Researchers, after 20 years of study at the Laboratory of Socio-Economic Studies of the National Institute of Mental Health, have concluded that there are reciprocal effects of: 1) social class and future occupation, and 2) social class and degree of stress and coping abilities (McNett, 1981). Kohnm, one of the researchers interviewed by McNett, believed that the critical variable in class and child rearing values seemed to lie in the degree of self direction experienced. Self direction was found to rise as social class went up. There are some indications that LD students attribute task success or failure to external sources as well as to their own efforts (Tollefson, Tracy, Johnsen, Borgers, Buenning, Farmer and Barke, Note 5). Individuals who perceive locus of control as external generally have been found to have lower levels of career maturity (Dean, 1981). If personal effort is not seen as effecting outcomes, why should an individual develop a work ethic? Handicapped individuals often feel ineffectual in controlling their own lives. Well-meaning individuals who take over in an effort to "help" may actually contribute to the problem. All of the above information suggests that a student with a learning disability, especially if from a low socioeconomic background, may need special assistance to widen career options, to locate constructive role models, and to build effective coping skills.

Ideally, vocational assessment for LD students should be a part of career education. As an on-going developmental process, the evaluation will necessarily involve many individuals. A team approach is needed with the varied responsibilities shared by school psychologists, teachers—special education, regular and vocational teachers, guidance counselors and other professionals (e.g., juvenile court workers, speech therapists, rehabilitation counselors, etc.) who may be involved, as well as, parents and, most especially, the student. A developmental vocational evaluation should become a part of the career exploratory and self awareness process, while recognizing that frequent repetition and varied forms of input may be required before the information becomes usable for the LD students. Students should not only participate in evaluation and receive feedback, they should, in turn, check out the suggested next steps in defining appropriate personal goals and give feedback to the evaluators as the process continues.

The first step to complete in an ongoing vocational evaluation is to create a level of trust that allows each team member to share both knowledge and ignorance, the latter being particularly important. School psychologists often have poor rapport with vocational educators. They may be seen as irrelevant or as pompous, condescending "experts". The start toward multidisciplinary cooperation may begin with school psychologists and an application of their psychological expertise to create a productive climate.

Traditional Procedures in Vocational Assessment

Many of the evaluation procedures routinely carried out at the secondary level are applicable to the first two components of vocational evaluation called for by Mori (1980). Regarding the psychological social-achievement component, school psychologists typically already measure cognitive strengths and weaknesses, visual-motor development, achievement levels, social behaviors, personal-environmental interactions, and personality characteristics, although the latter components may get less attention. For vocational evaluation, these same measures are used, but viewed and interpreted in terms of what they suggest regarding varied careers and job requirements. For example, psychologists are well aware that students approach the WISC-R (Wechster, 1974) tasks in varied ways, although the end score may be the same. Five students with the same low score on the Block Design subtest may have achieved poorly for differing reasons: one may be motorically slow and clumsy; the next, perfectionistic and extremely careful; the third may give up and refuse to try when the task becomes difficult; the fourth, dawdles and doesn't care to try; while the fifth may keep plugging away but continues to use the same ineffective solutions. It would appear that different remediation may be needed for the different students to become effective workers on tasks involving visual analysis and visual motor coordination. It may be helpful to check out hypotheses regarding individual traits and to see if, and how, they are applied in different settings and circumstances. Testing of limits may offer additional insights. Results of previous ability measures should be reviewed for consistency to yield more reliable estimates of ability. (Note: When there are multiple individual IQ measures already on file that are consistent with each other and with observed functioning, it may be a waste of time to give yet another IQ test.)

Regarding academic achievement and performance levels, criterion referenced tests and teacher evaluations of classroom performance are helpful, in addition to normed tests of achievement such as the ***Wide Range Achievement Test*** (Jastak & Jastak, 1978), the ***Peabody Individual Achievement Test,*** (Dunn & Markwardt, 1970) or the group administered ***Adult Basic Learning Examination*** (Karlsen, Madden & Gardner, 1967). Again, previous achievement measures typically found in the records should be reviewed for consistency and patterns of progress or regression noted.

Inventories such as the ***High School Personality Questionnaire*** (Cattell & Cattell, 1968) or the ***Minnesota Multiphasic Personality Inventory*** (Hathaway & McKinley, 1967) which may have to be taped or read to students (thus effecting validity of the norms) may still provide some productive data regarding personality functioning and style. Some type of projective may be given: ***The Hand Test*** (Wagner, 1971), ***House-Tree-Person*** (Buck & Jolles, 1964), drawings and sentence completions are quickly administered favorites. The ***Rorschach*** (Rorschcach, 1951) or ***Thematic Apperception Test*** (Murray, 1943) on occasion might be helpful if the examiner is proficient in their use. Interviews with parents, teachers, and other involved adults are valuable sources of information as are checklists and behavioral and developmental observations of the student in varied situations. Peer and self reports can be useful.

A medical examination is a component of both vocational and educational evaluations. It is wise to discover if health problems exist which can be remediated and to define any physical limitations that have vocational implications. The doctor should be informed in advance of the purpose of the examination.

Other Components and Specific Instruments for Vocational Evaluation

Beyond usual techniques and models of assessment familiar to school psychologists, what is needed for a vocational evaluation? The traditional vocational rehabilitation evaluation model of assessment is of value, but is incomplete in the school setting. This model emphasizes methods and techniques aimed most often at determining what an individual can do at a vocationally minimal entry level (Stodden & Ianacone, 1981).

Schools must provide ongoing data to: 1) establish current status and appropriate placement, 2) recommend future placement(s), 3) define instructional needs, especially remedial services that may help a student with specific deficits which currently rule out a desired option, 4) determine any special services required to enable the student to take advantage of the vocational training (or to obtain the job) (e.g.) transportation, therapy, and 5) evaluate outcomes of programs, as well as, individuals.

A multidimensional vocational assessment involving a systems approach is important, partly because career and vocational tests rarely have the kinds of reliability and validity that are desirable even for normal populations and few tests were developed for, or have norms for LD students. No single test or factor should be considered in isolation from all available data.

Mori's (1980) third component in vocational evaluations involves work-related factors and traits. The new ***Career Development Inventory*** (Super, Thompson, Lindeman, Jordaan, & Myers, 1979) theoretically should provide information regarding strengths and weaknesses in both the cognitive and conative factors of career maturity. In most cases, assistance would be needed by LD students to cope with the eighth grade vocabulary for the four basic subtests and an eleventh grade vocabulary for the fifth scale.

Vocational interest inventories are useful primarily for exploration purposes since interests are typically changing and evolving throughout the exploratory stage. (It should be noted that society's expectations and career education's practice are at times out of step with what is known regarding development; i.e., exploration is typically considered the goal for junior highs while job preparation is the task at senior high schools.) After age 17, expressed interests have as much predictive value as do the tests. The Department of Labor's (1979) ***Interest Inventory,*** the ***Career Assessment Inventory*** (Johansson, 1978) for jobs below college and professional levels, the ***Strong-Campbell Interest Inventory*** (1977) for higher level occupations, the revised ***Wide Range Interest Opinion Test*** (Jastak & Jastak, 1979) for non-readers of varied ability, and simple job sorting tasks, are suggested options.

The ***Minnesota Importance Questionnaire*** (Weiss, Dawis, Lofquist, Gay & Hendel, 1975) with a fifth grade reading level or the still experimental ***Salience Inventory*** (Work Importance Study, 1980) previously known as the ***Work Values Inventory*** are the best known measures to explore career values. Values are important determinants of career satisfaction.

There are few reliable measures of specific vocational aptitudes. for these the reader is referred to Buros' (1978) ***Mental Measurements Yearbook.*** The ***General Aptitude Test Battery*** (GAT-B) given by state employment agencies has 9th and 10th grade norms and can be used to provide an overview of occupational aptitudes. For some subtests, reading at the 6th grade level is required, however, there is available a less well established, ***Non-reading Aptitude Test Battery.*** Caution: the GATB has been found to often rule out jobs for individuals who, in fact, may turn out to be good workers in the failed area.

The final component in vocational evaluation consists of work-related skills. A promising, but as yet unpublished test by Mathews, Whang and Fawcett (1982), has been developed for LD adolescents using direct observation and measurement techniques to measure job-related skills. Also, for low verbal students, the ***Program for Assessing Youth Employment Skills*** (PAYES) (1979), and for low functioning students, the ***Social and Prevocational Information Battery*** (SPEB) (Halpern, Irvin & Link, 1975) can provide indications of employability, economic self sufficiency, personal habits, communication, etc. Finally, ***The Classification of Jobs According to Worker Trait Factors*** (Field & Field, 1980) is recommended to assist evaluators in appropriately matching students and possible jobs in terms of physical demands, working conditions, general education needed, specific vocational preparation required, aptitudes and interests, and temperament.

Work samples, simulated work situations (e.g., in the vocational classroom), or on-the-job situational assessments are especially useful for students who have a history of school problems and who tend to perceive traditional testing as negative or irrelevant. This type of "testing" is typically more motivating, as well as more directly applicable to specific job situations.

Since many schools will not have the money or facilities for work samples, it should be noted that LD students may be eligible for service by state vocational rehabilitation agencies. The JEVS is the most frequently used work sample system and provides useful observations for evaluating work potential, but it lacks adequate norms. The Singer and the Valpar have the best norms, but some evaluators find the Singer too job-specific and the Valpar results are difficult to apply to specific jobs. The best approach probably would be to do an analysis of local job needs, get related work stations from varied systems—or create your own—and then develop local norms for the specific local populations.

Simulated work situations can be provided in the classroom and the evaluation carried out by vocational instructors. Texas researchers have provided examples of how to identify entrance skills necessary for school programs and exit skills necessary for employment (Atkins, Feichtner & O'Brien, 1977; Davidson, 1979) and have devised the Texas Career Education Measurement Series to screen handicapped and nonhandicapped student performance ("A Handicapped Student Needs Assessment," 1977). On-the-job situational assessment is more difficult to provide, but can be the most realistic and helpful of all in determining potential success or failure at the moment and in terms of defining what must be accomplished prior to any future success in that situation.

Hopefully, one day special education students will be assisted in both finding jobs and in making a satisfactory job adjustment before their education is considered complete. The time for evaluations is while time and resources are still available to fill in the gaps that currently undermine the LD student's potential for occupational success and satisfaction.

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Comprehensive Vocational/Career Assessment of Emotionally Disturbed Adolescents and Adults

*Donald J. Tellefsen**

Often the professional in education does something because it has become an ongoing method. Usually it is not customary to question traditional procedures or to evaluate whether they are achieving the desired goals. Priorities are generally determined by policies, legislative requirements, administrative processes, and other demands to the extent that student needs are sometimes overlooked.

In the educational area of special needs learners, the problems of emotionally disturbed students have puzzled and frustrated professionals for years in terms of classification and treatment. Traditionally education has dealt only with mild behavioral disorders leaving the more severely disturbed individuals to psychiatry. With the implementation of specific federal legislation (e.g., The Education of All Handicapped Children Act of 1975, P.L. 94-142), however, education has taken increased responsibility not only for prevention of emotional disorders in the schools, but also for the treatment of severely behaviorally emotionally disturbed students. Education's response to dealing with the emotionally handicapped has been to create special classes with a primary function toward reducing and controlling the behavior of aggressive or overactive students, and providing secondary academic remediation. This pattern of intervention continues at each educational level until the student is dismissed from or is transferred to another special education class, graduates from high school, or drops out of school all together.

The traditional psycho-educational assessment battery administered by the school psychologist yields important information regarding the educational and behavioral needs of the elementary school age emotionally disturbed student. The continued use of the same "traditional" psychological assessment procedures undertaken with the emotionally disturbed adolescent, must be examined for their usefulness in preparing these individuals for a successful transition into the world of work.

Vocational education is a viable and needed addition to the emotionally handicapped student's existing general educational program. Secondary level students need a broadening of career exploration experiences rather than strict academic programming. Vocational assessment and training of the emotionally disturbed adolescent, however, have received little attention among the professionals in special education (Mori, 1979). In the past, the emotionally handicapped student's only opportunity for vocational training has been through direct placement into a vocational education track. In this instance, the emotionally disturbed student experiences the phenomenon of being "up the river without a paddle" where their individual academic and emotional concerns are ignored.

As school psychologists, we must recognize that our obligation to the emotionally handicapped student extends to all areas and through all levels of their educational experience. As professionals, we must not assume that traditional methods and procedures hold true and steadfast for all. Many of these handicapped adolescents, when given the proper vocational opportunities that are matched with their needs and capabilities, have capacities that can be developed toward productive participation in society. Vocational assessment is an area where school psychologists can become active agents in assuring that individual concerns of the emotionally handicapped learner are considered in the planning and implementation phases of a vocational training program.

Characteristics of the Emotionally Disturbed

According to Black and Black (1979), emotionally disturbed (ED) adolescents represent one of the largest of the handicapped populations. ED students are generally not clearly identified, in part because their characteristics overlap with other exceptionalities such as the learning disabled and delinquent populations (Black & Black, 1979). Few students have single handicaps or disadvantages, and instead exhibit secondary emotional responses to the failure and frustration they encounter as a result of trying to cope with their primary disability.

Whether seen as a single manifestation of "deep-seated emotional problems" or as a secondary "emotional side-effect," specific extremes in the behavior of ED adolescents are usually observed. The observed aberrations of behavior that generally characterize emotionally handicapped individuals usually include some of the following considerations: patterns of non-involvement or withdrawn behavior, hyperactivity, emotional outbursts, aggressiveness, low frustration tolerance, temper tantrums, and unpredictable reactions to social approval or disapproval. It is the magnitude and frequency of these behaviors that further distinguishes the ED student from the non-ED student.

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In many instances, due to excessive failure experiences, ED students are likely to become explosive, fearful, excessively shy, or detached from social interaction. In addition, ED individuals may view themselves as inadequate or deficient leading to the development of a poor self concept (Goldberg, 1981; Kishor, 1981; Kronick, 1978).

Although there is little research literature addressing ED individuals and their differences in vocational development as compared to normal individuals, some experts believe this to be an important issue that needs to be investigated. Goldberg (1981) found five groups of handicapped adolescents, including ED, tested sigificantly lower than normal peers on all measures of vocational development. Plata (1981) studied levels of occupational aspirations in ED and non-ED adolescent males. He found that the ED adolescents, when compared with normal adolescent peers, had lower occupational aspirations than their normal peers.

Recently, the relationship between personality variables and vocational development has been investigated with ED adolescents (Karayanni, 1981) and with adjudicated delinquents (Woodbury & Pate, 1977). According to Karayanni (1981), ED students differed in their concepts of themselves as persons, in their attitudes toward peers, and in overall career maturity when compared with well adjusted peers. This study found a definite relationship between psychological and vocational development, suggesting that improvements in personal development will bring about enhancements in career maturity. Karayanni (1981) goes further to speculate that improvement in career maturity might bring about positive growth in personal development as well. Super (1957) and Crites (1969) have already demonstrated that there is a moderately positive relationship between vocational adjustment and personal adjustment. These authors found that personal adjustment status and self-concept increased as a by-product of career counseling without direct personal therapeutic interventions.

Woodbury and Pate (1977), in a study to identify the dimensions of vocational and personality variables among adjudicated delinquents, indicated that this group of adolescents possesses uncrystallized vocational interests, a stereotypic view of work, and vocational maladjustment. Their investigation also pointed to the relationship of personality variables and vocational maturity. Further, this study implied the importance of coordinated services that treat both vocational and personal adjustment problems (Woodbury & Pate, 1977).

Beley and Felker (1981) have shown that as a group those individuals with psychiatric impairments often experience the lowest success rate in vocational rehabilitation. They found that more severe emotional disorders may be exhibited in terms of the impact upon the individual's functioning at any given time (Beley and Felker, 1981). These authors further state that, although diagnostic classifications or labels are used to identify an individual's behavior, these do not provide sufficient insight into the dynamic factors and related functional limitations on future training potential or work behavior of the psychiatrically impaired (Beley and Felker, 1981). These authors conclude that only an in-depth psychological evaluation incorporating social-environmental demands of the work setting will specifically focus on the vocational implications of the individual's emotional handicap.

The Vocational Assessment Process

A comprehensive vocational evaluation or multidimensional assessment procedures should identify the functional abilities and limitations of ED students to provide meaningful evidence for appropriate vocational program decisions. Many professionals advocate the use of a comprehensive or multidimensional vocational assessment and evaluation (Beley and Felker, 1981; Halpern, 1978; Mori, 1979; Phelps & Wentling, 1977). Among the advantages these authors see in a comprehensive vocational evaluation are: the vocational information is obtained by multiple sources, a team approach to career program placement decisions is used, and the client is actively involved in the entire vocational assessment process. As discussed earlier, diagnostic labels or behavior classifications provide little if any vocational information that can be used in vocational programming decisions for the emotionally handicapped; that is why comprehensive vocational evaluations are undertaken.

Phelps and Wentling (1977) have spoken harsh words in regard to the utility of current psychological assessment results and the limited utility of the information contained in "traditional" psychological reports for occupational teachers. Upon closer examination of the information obtained during a "traditional" psycho-educational evaluation and the implications that these data can have on future vocational programming, however, this writer will have to disagree with their myoptic view of the "traditional" psychological evaluation.

School psychologists are familiar with the kind of traditional psychological evaluation that an ED student receives throughout the course of his/her education. Typically, five types of information are collected: physical, psychological, educational, behavioral, and socio-emotional information. The results of these evaluations give a picture of the current intellectual, academic, physical, behavioral, and emotional status of the student.

Knowledge of current intellectual and emotional functioning of the ED individual gathered from traditional psychological assessment procedures can greatly assist the overall vocational evaluation. The traditional techniques of evaluation can be used for determining what academic skills the student has intact and where remediation efforts in the vocational areas may be most helpful.

Background information that can be obtained by reviewing past school records of the ED student can help to identify the strengths, assets, interests, and limitations of the students. In addition, a good picture of the student's progress can be gained by reviewing and comparing a series of past assessment evaluations. School records can also reveal cumulative summaries of achievement tests, health histories, and other information that can be important to decisions of vocational programming.

Intellectual/cognitive results can reveal the ED student's unique pattern and level of abilities. Besides giving an overall picture of the intellectual strengths and limitations of the student, cognitive assessment can uncover hidden potentials and aptitudes of ED students.

Academic assessment results can be used to assist vocational evaluators in choosing tests for the vocational battery that appropriately fit clients' reading ability and level. For example, there is no need to administer a non-reading aptitude measure to a high school student who is reading at grade level or vice versa. Once the vocational evaluation is completed, the vocational teacher can use this same information to adapt his/her reading materials at the appropriate ability level for the student.

Tentative vocational or occupation decision-making can also be undertaken by the use of the results from the academic evaluation. For example, if an adolescent had occupational aspirations of becoming an engineer, but is lacking adequate arithmetic proficiency to pass college level math courses, then the student can decide if she/he wants to acquire adequate math skills or adjust their occupational aspirations. The learning assessment which systematically identifies and explains how a person learns, is important in a vocational evaluation because unrecognized learning disabilities can easily be confused with lack of ability to perform a task, thus limiting the options that the student could have vocationally.

According to Guidubaldi, Kehle, and Murray (1979), the assessment of socio-emotional functioning of the handicapped can reveal a "constellation of attitudes and behaviors that may be more influential in determining the future success of the handicapped individual" (p. 247), and might also give insight into what types of career paths the ED adolescent can follow.

Social-emotional assessment has been an especially important component of the overall evaluation process with ED students. In many instances, the observation and evaluation of the emotional characteristics of the ED student determine the student's eligibility for placement in a class for the emotionally handicapped. It is true that assessment in this area is also important to the vocational evaluation process. The student's placement into a vocational training program is not, however, totally weighted upon the results from this area. Remember, that in the comprehensive vocational evaluation, socio-emotional assessment results are just another piece of information that fits together with other bits and pieces of assessment to form a complete vocational picture of the individual. Once the vocational assessment picture is completed, informed vocational programming can be made.

The observation and evaluation of aberrant behaviors, feelings, and cognitions through the socio-emotional assessment process can provide insight and information to the vocational program planner and the ED student about effective functioning. Information from this area, when examined in conjunction with other areas, can reveal that the emotional behavior may be a secondary reaction to learning deficits experienced by the student.

When the emotional problem is the primary disability, the information gained during this phase of evaluation can determine the severity of the disability, how it affects the student's overall functioning, and the results can create effective programming suggestions for the ED student entering vocational training. Without such information about the ED student, all of the teachers involved with the ED adolescent will be left the difficult task of trying to meet needs in this area with no clear statement of how the ED student will react within the vocational milieu.

According to Woodbury and Pate (1977), Beley and Felker (1981), and Bordin (1968), therapy to resolve or decrease the aberrant behavior should precede any type of career development program. Through the administration of the traditional psychological evaluation battery, answers can be obtained to specific questions regarding students' current intellectual, academic, and emotional functioning. It can further aid in the selection of vocational assessment techniques.

As any trained school psychologist is well aware, steps should be taken, prior to assessment, to insure that the test situation is non-threatening to the maximum extent possible. Due to the ED individual's emotional over-reaction, the examiner should make the ED client as emotionally comfortable and at ease as possible. This is especially an important initial step before evaluating this type of client.

During an initial interview period, the examiner should orient the client in regards to the "why's" and "what's" of the assessment process. According to Beley and Felker (1981), the evaluator should describe and explain the evaluation process to the ED client and the client should be encouraged to ask questions regarding the vocational assessment process and procedures. The client should be considered a member of the evaluation team whose involvement should be actively encouraged from the beginning. The results of active client participation in the vocational evaluation process has resulted in a greater commitment on the part of the client and minimizes the apprehension that many clients bring to an evaluation process (Beley & Felker, 1981).

Besides the information gathered through traditional assessment procedures, the school psychologist must supplement this with information gathered from the vocational area. Although the school psychologist is not relied upon to obtain all the data in a comprehensive vocational evaluation, his/her experience and expertise cannot be overlooked. A comprehensive vocational assessment relies upon the integration of information from multiple sources, with multiple perspectives and using multiple techniques to arrive at the most appropriate individual vocational decision possible (Beley & Felker, 1981).

The vocational component of a comprehensive vocational evaluation should include standardized aptitude scales, interest inventories, work-related skill measures, work/job samples, social skills analysis, and situational assessment (Beley & Felker, 1981; Brolin, 1973; Brolin & Gysbers, 1979; Mori, 1980; Neff, 1970; Patten, 1981; Phelps and Wentling, 1977; Sitlington & Wimmer, 1978; Stodden & Ianocone, 1981).

Aptitude measures are designed to predict an individual's ability to learn the particular skills required for satisfactory work performance. Standardized aptitude tests are often classified according to the occupation or educational groups on which they were normed. A general weakness relative to most vocational assessment instruments, however, is their lack of appropriate norms for exceptional populations. Hence, the results of these evaluation procedures should be used with caution.

Occupational interest inventories may be used to determine interest patterns which will lend themselves to appropriate vocational programming decisions. Standardized tests are not the only way an individual's vocational interests can be uncovered. Clemens (1980) suggests that career interests can also be explored through the use of self-rating scales and by questioning the students as to what they would like to do upon completion of school. Preparation of the student prior to taking an interest inventory is important for various reasons including informing the individual regarding the "what's" and "whys" of the selected instrument. A particular caution in the use of interest inventories should be noted by both examiner and student: No test can give final answers (Clemens, 1980). Vocational interest inventories should be utilized only to provide useful information and stimulate career exploration, not to reduce the career options of the student.

Work-related skills can be obtained through interviews, direct observations of work skills in controlled or actual job settings, commercially developed assessment systems, and self-developed work samples. Asking the students what types of jobs they held previously and what job skills they needed to perform on the job will add valuable information to the assessment process. Also, past employers can lend important information in this area. Directly observing the students perform a job will reveal their strengths and limitations related to particular job characteristics. Commercial assessment systems, although costly (up to $20,000) can be useful in determining the individual's capability to perform specific job related tasks and point out the student's particular strengths and weaknesses within specific job-related tasks (Sitlington and Wimmer, 1978).

The lack of appropriate social skills, not the employee's ability to do the job, has been found to be a major reason for loss of employment (Brolin, 1973; Mori, 1979). Assessment in the social or personal skill area is important in order to determine ED individuals' interactional relationships. Social skill assessment should be conducted both formally and informally to provide information regarding the student's maturation in the family, school, and work contexts (Mori, 1979). Guidubaldi, et al. (1979) suggested the use of a socio-metric matrix to collect pertinent data concerning the student's social attributes.

Ultimately the most reliable vocational information comes from long-term observation in actual work situations. According to Sitlington and Wimmer (1978) and Neff (1970), situational assessment allows an experienced work evaluator to observe the specific aspects of work performance while the individual is in an actual work situation. The evaluator can not only obtain information concerning how well the client performs the task, but also focus upon the client's social or interactional behaviors in regards to peers and supervisors.

A person's career entails both work and leisure. Therefore, it is important that evaluation be conducted in the leisure domain, as well as the vocational domain. Directly interviewing the student or having him/her complete a written inventory of past and present leisure pursuits can provide valuable information. Information concerning the ED student's judgment, communication, and initiative can be obtained by assessing the individual's leisure choice activities (Kokaska, 1978).

The leisure activities and interests an individual pursues can reveal information regarding the potential vocational areas which the student would like to further explore. Analyzing individuals' leisure skills and interests can also indicate deficiencies in the leisure domain that need to be developed. Kokaska (1978) advocates the development of socially accepted forms and functions of leisure, acceptable behaviors. including group activities, competition, and pursuits of private interests for handicapped students.

Information concerning the student's aptitude, interests, leisure pursuits, work-related, and social skills can be obtained through student interviews, consultation with teachers, informal tests, observations, and reviews of previous IEPs and school records.

In addition, direct observation and rating scales should be used as part of the vocational assessment procedure to determine the occupational skills of the ED adolescent or adult. Data gathered regarding the client's vocational interests, aptitudes, social, and job related skills can provide important program planning and decision-making information concerning the most appropriate vocational placement of the student. Beyond the need for initial assessment, an ongoing monitoring system is needed. Maki, McCracken, Pape, and Scofield (1979) and Sitlington and Wimmer (1978) advocated that vocational assessment data should be collected throughout the handicapped student's entire secondary school experience. In fact, such data should follow the ED individual until adequate vocational adjustment is made. This continued assessment process is needed to monitor ED clients' progress and to make necessary adjustments (Phelps & Wentling, 1977).

Summary

To succeed in the world of work it is necessary to choose a career that will be satisfying and rewarding for the individual. For the ED student, as well as other handicapped individuals, the difficulties they encounter in making vocational decisions vary as much as the types of behaviors they exhibit.

The purpose of a comprehensive or multidimensional evaluation is to identify functional abilities and limitations of the ED student and to provide meaningful evidence on which appropriate vocational programming decisions can be made. As the individual's skills, interests, aptitudes, abilities, and preferences are identified, realistic vocational opportunities come into focus.

It is of vital importance that the school psychologist involve a wide range of professionals and others in the vocational assessment and planning decisions of ED individuals. As counselors, teachers, work evaluators, social workers, parents, and the student work with each other, there will be smooth cooperation and a united purpose. Then the transition from the special education class to a vocational training program can be made easier and lead to a successful match of the needs, abilities, and desires of the emotionally handicapped student.

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Vocational Assessment Procedures for the Deaf and Hearing Impaired

*Brett A. Blevins**

Traditionally, vocational evaluation of the handicapped has been geared toward the rehabilitation of adults with past experiences in the world of work. This orientation has generated concepts and instruments that do not readily lend themselves to the framework of career development. Super's (1957) writings on career development involve the notion that career behaviors are entirely developmental. No longer is career decision making viewed as an isolated, singular event that occurs upon high school graduation (Crites, 1978; Seligman, 1980). Rather, career planning and decision making are increasingly being viewed as an ongoing process extending over the entire lifespan. For deaf and hearing imparied students particularly, this process of career development does not operate smoothly or clearly.

One of the major assumptions in career development theory is that individuals continually modify concepts of self and the world of work, and seek to bring these elements into harmony. Because of a wide variety of physical and cognitive limitations, career development of handicapped students is not necessarily parallel to that of nonhandicapped students. It is a curious fact that eventually many deaf individuals choose or are "forced" to work in traditionally low socioeconomic jobs, despite their vocational potentials (Krupnic & Krieger, 1976). Studies have supported the idea that deaf and other handicapped individuals tend to underrate their vocational potentials because of their disability, and aspire to occupational positions at levels that are not equivalent to their basic abilities (Bingham, 1980; Lacey, 1975; Wentling, Butterweck, & Zook, 1976). Just as other handicapped individuals are disproportionately represented in semi-skilled, low-paying, manual jobs, data indicate that many deaf workers are concentrated in printing, bakery, and dry cleaning trades. At the other end of the work spectrum are deaf college graduates, most of whom are employed as teachers or ministers primarily serving other deaf people.

Numerous surveys on the occupational distribution of deaf workers support the need for the design and implementation of career developmental programs. A career development program for deaf and hearing impaired youngsters is even more imperative, when the data from a study completed by Lerner and Guilfoyle (1970) on career behaviors of deaf adolescents are analyzed. That most deaf adolescents are vocationally immature comes as little surprise to most professionals who are familiar with the deaf. Quite revealing, however, is the observation that the ideas about work are usually passed from the adult deaf community to older students, who, in turn, share this information with younger ones. This pattern of communication is not unusual, since the deaf population is a closely-knit minority. Nevertheless, in view of employment statistics on deaf workers, this communication network does not transmit a full range of job opportunities.

There is an evident need to help these handicapped students prepare for entry level employment that is both satisfying and acceptable to each individual's unique needs. The purpose of vocational assessment activities is to predict with a fair amount of confidence a student's potential for meeting the requirements of any given job (Fry, 1981). It is disheartening, however, to find that most vocational instruments account for only about 20 to 30 percent of the total variance in human work performance. Sprafkin (1980) reminds us that traditional procedures have been fraught with difficulties, "one of which is insufficient attention to situational determinants of behavior" (p. 15).

Related to this belief that environmental events affect behavioral responses is the proposal that work-related skills perform a major role in career adjustment. There is accumulated evidence to support the position that occupational social skills are just as important as specific work skills in facilitating the career adjustment of handicapped students (Brown & Kottler, 1979; Carsrud, Carsrud, Dodd, Thompson, Gray, 1981; Ellington, 1981). Moreover, vocational rehabilitation personnel have indicated that many deaf workers lose their jobs early in their careers not because they lack specific work skills, but because they have problems in interpersonal relationships and work responsibilities. Harlage (1974) aptly concludes that, although work skills are necessary for gainful employment, social competence will likely determine how successful one will be in keeping a job.

Worker Characteristics

An analysis of work-related behaviors demonstrates that there are two sets of variables to be studied: one set involves psychological characteristics related to employment, while the other includes situational parameters which affect human work performance. This section reviews several standardized tests used for measuring the work potential of deaf and hearing impaired individuals. It should be noted that the selection of tests must be based on customary psychometric properties of applicability, reliability, and validity. A review of the literature related to vocational assessment and deaf and hearing impaired (Gerken, Grimes, & Brown, 1978; Lacey, 1975; Levine, 1974; McGrone & Chambers, 1977; Sink, Field, & Raulerson, 1978) indicated: (a) that many professionals were unfamiliar with the needs of deaf and hearing impaired people; (b) a clear lack of appropriate instrumentation existed in terms of reading levels and psychometric requirements; and (c) a prevailing attitude that the evaluation, training, and vocational preparation of deaf persons do not differ from those of other minority groups. This review of the literature suggests that the widespread practice in evaluating the work potentials of the deaf and hearing impaired has been fraught with difficulties.

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One obvious problem in assessing the deaf and hearing impaired is that a person's inventoried interests may not be congruent with those of others employed in a variety of occupations. This apparent incongruence between self and the world of work may be anticipated, since many students deafened at birth or early infancy are usually placed in residential facilities. Not only do they tend to grow up with a narrow view of the world, but, because of their auditory handicap, they are further isolated from peers, parents, and significant others who do not share a common method of communication.

Perhaps more debilitating than the severe loss of hearing is its consequent effect upon reading development. The average reading level for most deaf adults ranges from third to fifth grade (Mindel & Vernon, 1971). This deficit has several implications for learning, the most immediate being that most pencil-and-paper tests require at least a sixth grade reading level. Further, techniques (commonly used in public schools) contain abstract, printed material slanted toward the verbally oriented students (Nadolsky, 1981).

When evaluating deaf and hearing impaired students, one must adopt an orientation to seek out potential interests not readily evident in test data alone. Work sampling procedures employ a variety of simulated work activities. These activities simulate conditions of different occupations and provide individuals with the opportunity to learn about what they like and dislike concerning work requirements. Furthermore, these procedures enable vocational evaluators to study behavior under controlled circumstances when direct observation is not possible in real work situations. ***The Test Orientation and Work Evaluation in Rehabilitation*** (TOWER), the ***Philadelphia Jewish Employment and Vocational Services*** (JEVS), and the ***Singer Vocational Evaluation System*** (SVES) are examples of commercially produced work samples. Each of these systems includes normative data of deaf and hearing impaired individuals. While such systems have definite weaknesses in terms of their prohibitive purchasing cost and methods for giving instructions, work sampling procedures represent a major technological breakthrough in the vocational evaluation of deaf and hearing impaired students who have special learning needs.

As might be expected, there is a dearth of research data in the literature on vocational interest techniques that can be used with the deaf and hearing impaired. One instrument that may be particularly useful is the ***Wide Range Interest-Opinion Test*** (WRIOT). The WRIOT contains reusable booklets, consisting of 150 sets of picture triads. It also has a definite strength in its normative sampling information on the deaf. Another career interest inventory is the ***Picture Interest Exploration Survey*** (PIES). The PIES appears to be a useful instrument for stimulating career exploration with 156 picture slides which are grouped in 13 occupational areas, but it lacks adequate research data to support its validity.

Several vocational assessment techniques, including those especially adapted for deaf and hearing impaired individuals, are too extensive to describe here, but most of them are presented in Table 1. Although these procedures have been empirically evaluated, only a few have normative sampling information on the deaf and hearing impaired. Facilitating career development of these students begins with needs assessment during the freshman orientation year in high school. Vocational picture interest inventories can be administered to identify student interests in particular occupational clusters. In addition to these instruments, interviews with deaf and hearing impaired students can stimulate discussions of work values, interests, and entry level behaviors and skills. It is well documented in the literature that students with vocational or career problems can benefit from career counseling, and more is occurring in small group settings. Not only is the group setting a good vehicle for information-giving and generating alternatives, but it is also a treatment modality of choice for teaching deaf and hearing impaired students decision-making skills. Hence, interventions are designed for both individual and group participation to facilitate career development.

Table 1
VOCATIONAL ASSESSMENT TECHNIQUES

Nonreading Aptitude Test Battery (NATB) - Measures Same Nine Aptitudes as GATB
Purdue Peg Board
Geist Picture Interest Inventory
Wide Range Interest-Opinion Test (WRIOT Revised)
Minnesota Clerical Aptitude Test Aid
Minnesota Paper From Board (Clerical Skills, Spacial Relations, Perceptual Skills)
Picture Interest Exploration Survey (PIES)
Work Values Inventory
Job Experience Kit
The Test of Orientation of Work Evaluation in Rehabilitation (TOWER)
Philadelphia Jewish Employment & Vocational Services (JEVS)
Singer Vocational Evaluation System (SEVS)
Home Made Sampling Procedures
Observational Recording Procedures (Functional/Static)
Situations Analysis (Naturalistic/Analogue)
Sociometrics

A comprehensive vocational assessment could include several components, many of which can be selected a priori based upon knowledge of student (manifest or inventoried) interests. These components may include: (1) vocational aptitudes for specific interest of area; (2) work sampling procedures; and (3) career maturity tests. Administrations of the ***Career Maturity Inventory*** (CMI) have been suggested as a way to provide a "checkpoint" for career development and to evaluate the effectiveness of intervention programs (Crites, 1978; 1981). Like many pencil-and-paper tests, the CMI requires at least a sixth grade reading level, which is beyond the reading achievement of most deaf and hearing impaired students. Considerable effort will have to be expended in achieving a high level of simplicity for giving test instructions.

It is not enough to give a battery of psychometric tests to determine vocational potential. Although there are a few vocational techniques which come close to assessing actual work behaviors (e.g., work samples procedures and job analysis), a determined effort must be made to enter the mainstream of the real work world. An initial practical problem is that the behavior with which one is concerned must be identified. This problem raises the question of which molar behavior category is pertinent to successful employment. In their research involving learning disabled adolescents, Mathews, Whang, and Fawcett (1982) found that these students were deficient in four of the ten listed occupational social skills. While they do not purport their list to be exhaustive, it does exemplify those behaviors that have been identified by employment experts as pertinent to job seeking and retention. Table 2 compares the occupational social skills that were abstracted from three different sources. One list includes critical vocational behaviors adopted by Walker (1969) in his study of rehabilitation clients; the second includes the social interaction skills used in the study of Mathews et al., (1982); and the third is an excerpt of a rating scale adopted by the New River Valley (Virginia) Sheltered Workshop. This table of occupational social skills covers the same aspects of behaviors deemed important for finding and keeping jobs.

Table 2
OCCUPATIONAL SOCIAL SKILLS

Critical Vocational Behaviors (Walker, 1969)	Social Interaction Skills Related To Job Tasks (Mathews, et al., 1982)	Evaluation Rating Scale (New River Valley Sheltered Workshop, 1982)
A - Uses appropriate interview behaviors	1 - Participates in job interviews	a - Become engrossed in work
B - Uses job leads	2 - Gets a job	b - Achieves easy acceptance within group
C - Attend work regularly	3 - Arranges job interview	c - Meets supervisor's expectations
D - Does not irritate co-workers	4 - Arranges job interview when opening is available	d - Works with little supervision
E - Accepts subordinate role in relating to supervisor	5 - Provides constructive criticism to co-worker	e - Gives adequate attention to job
F - Remains consistently at work station	6 - Compliments coworker on job well done	f - Easily adjusts to new job assignments
G - Maintains adequate production speed	7 - Accepts compliment from coworker	g - Sticks to job in face of setbacks
I - Has capabilities to meet quality standards	8 - Accepts criticisms from employer	h - Shows steady work
	9 - Accepts suggestions from employer	i - Meets average standard for industry
	10 - Explains problem to supervisor	j - Meets average standard of industry for product

A look at the social skills literature shows a variety of measures that have been used to select children for training and to evaluate treatment outcomes. Michelson and Wood (1980) reviewed the literature on assessment strategies and found three measures which have been commonly used: (1) behavioral observations (e.g., naturalistic or structured), (2) behavioral analogue situations (e.g., role play), and (3) external reports (sociometrics and ratings). Gottman and Leiblum (1974) suggest that because only one single measurement operation has weaknesses when used alone, it makes more sense to use several approaches. This comprehensive approach to collecting data provides an empirical base for the development and evaluation of remedial intervention in social skills training.

Despite the criticism that direct observation is too time consuming, observing behaviors in natural environments is one of the best strategies for assessing social competence of deaf and hearing impaired students. Given that social skills can be operationally defined, observed, and monitored, direct observation would be the most preferred strategy, but impractical to implement. Aside from the cost of conducting such observations, securing circumscribed behavioral samples of interest is difficult. With the exception of structured analogue situations or work sampling situations, to observe the social interaction of an interview would be impractical. In fact, many of the interpersonal behaviors deemed important by employment experts occur infrequently, unpredictably, and out of public view.

Among the many techniques to use in gathering information, Bersoff (1973) suggest the use of "miniature situations" which replicate real life work settings. There are a few examples of role play tests or analogue situations cited in the literature (Bersoff, 1973; Eisler, 1976; Kerlinger, 1973). For example, a trained observer (i.e., participant observer) accompanies a client into a community and encourages a deaf or hearing impaired student to perform a series of interpersonal interactions such as obtaining a job application or arranging a date for a job interview. Alternatively, structured situations that simulate job-related scenes enable an observer to study various reactions to different, though standarized, responses prompted by an experimental confederate. The student's behaviors can be observed and monitored either in vivo or via videotape. The most systematic study on analogue employment situations that are associated with finding and keeping a job has recently been completed by Mathews and his associates (1982).

Several limitations of direct observational procedures were documented above. One possible solution is to secure information directly from peer ratings. When accompanied with other sources of information, sociometric techniques may be used for screening and for socially validating behavior change as a result of training. In a series of writings on sociometrics (Barclay, 1966; Caulfied, 1980; Foster & Ritchey, 1979; Gresham, 1981; Kerlinger, 1973; Michelson & Wood, 1980), it became clear that sociometric measures are of particular use to identify students who have difficulty being accepted by their peers. Peer nominations are not limited to personality variables, but can conceivably include the whole spectrum of occupational social skills listed on Table 2. Thus, based on sociometric ratings, students can be identified at extremes on a continuum of competence, indicating those of whom are perceived by their peers as being "skilled" or "unskilled". Observational data on these two groups of students can then be compared to identify critical social variables that differentiate the two groups.

Summary

Several approaches to work sampling procedures, inventoried interest tests, and behavioral strategies have been suggested for appraising the vocational potential of deaf and hearing imparied students. The behavioral strategies have the flexibility to be used in conjunction for measuring critical behaviors considered important by employment experts for finding and keeping jobs. Traditionally, psychologists working in vocational training programs have relied primarily on instruments that purport to measure work-related characteristics. In doing so, a serious error of one-sidedness has been committed. It is not the purpose of this paper to examine all of the standarized vocational techniques currently in use for measuring the work potential of the deaf and hearing impaired. Nevertheless, the reader is urged to recognize that demand characteristics of work situations must be included in evaluating work potential. This extension of vocational assessment will require entry into actual industrial world of work. The emphasis on situational analysis of work behaviors will demonstrate that there is a combination of several variables to be studied. The combination of these variables will cast the vocational assessment of job potential in terms of people, rather than in terms of statistical probabilities.

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Vocational Assessment of Visually Impaired Secondary Students

*David Kirk**

In recent years, there has been an increasing demand for the assessment of visually impaired students at the local school level. Bauman and Kropf (1979) attributed this trend to more frequent requests for assessment of children who have been deinstitutionalized, placement of handicapped children in regular classrooms, and affirmative action for the visually impaired by employers. This increase can also be traced to current federal legislation such as Public Law 94-142 which requires that public schools provide an Individualized Education Plan (I.E.P.) within a least restrictive environment for each handicapped child. For the visually impaired child in the public school, development of the I.E.P. is based upon assessment of such factors as residual vision and vocational potential, as well as skill in cognitive, academic, social, developmental, and language areas (Genshaft, Dare, & O'Malley, 1980).

Along with this increased demand for evaluation of the visually impaired has come an emerging emphasis upon the vocational capabilities of the visually impaired. Shackleton, Wild, and Wolfe (1981) noted that the vocational well-being of the visually impaired is significant and must be actively promoted if a high level of job failure and unemployment is to be prevented in this population. Silberman (1981) stated that, "although prevocational skills and career education are emphasized in elementary and secondary schools today, they are so critical to future success of visually-handicapped students that the teacher of these students should be sure to have this component included as an integral part of the educational program" (p. 111). Prevocational skills and career education take on even more significance when recent statistics show that less than one third of working age visually-disabled persons are in the labor force, compared to almost three fourths of the working age population in the United States who are not disabled (Kirchner & Peterson, 1979).

Career education for the visually impaired should include accurate evaluation of the individual's vocational aptitude, interests and values. Hohenshil (1975) stated:

> Career education may be described as a developmental education program designed to assist all students, K-12, to acquire the necessary information about a wide variety of career alternatives in the United States, as well as to become knowledgeable about their own aptitudes, interests, and aspirations so that they can make rational and well-informed career choices. (p. 59)

In discussing job-seeking skills for the blind, Dickson (1979) stated that it was important that, "clients. . . review their work preferences and acknowledge their values and skills" (p. 25).

Characteristics of the Visually Impaired

Under Public Law 94-142 and according to Fagan and Wallace (1979), visual impairment is vision which, even with correction, adversely affects a child's educational performance. Both blind and partially seeing individuals are included in this category. Kirk and Gallagher (1979) defined blindness as visual acuity for distance of 20/200 or less in the better eye, and partially seeing as visual acuity greater than 20/200, but not greater than 20/70 in the better eye with correction.

There are also subgroups of visual impairment based upon onset and etiology. Adventitiously blinded persons who have experienced sight before blindness and congenitally blind are two such subgroups. Visual impairment may also be the direct result of retrolental fibroplasia, optic atrophy, retina pigmentosa, macular degeneration, diabetic retiniopathy, choroideremia, and albinism. Subgroup characteristics may also be related to amount of education, socioeconomic status, and whether or not the individual has been in a residential or public school setting (Vander Kolk, 1977).

The Visually Impaired and Career Development

Relatively little has been written about the career development of the visually handicapped; however, the general growth and development of this group is more like, than unlike, that of the sighted. Similarly, career development theories like that formulated by Super (1969) are applicable to the visually impaired population. Super's major vocational life stages of growth, exploration, establishment, maintenance, and decline eventually included the concept of discontinuity, or the idea that there were "unstable, multiple trial, and interrupted career patterns" (p. 8).

These discontinuities can result in delayed or impaired career development and are likely to occur in conjunction with the onset of a disability. Sinick (1979) stated:

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> Earlier discontinuities occur with earlier onsets. Many disabling conditions are congenital or arise early in life, whether from diseases, accidents, or other life events. Young people with disabilities often progress slowly or disjointedly through their vocational states. Impeding factors include reduced mobility, sensory or mental impairment, and prolonged medical treatment. Such factors make it difficult for affected persons to keep pace with their peers in career development. (p. 252)

Vocational aspirations and expectations often differ from that of sighted populations for the visually impaired for a variety of reasons. Traditional education has dealt more with knowledge than with life skills. As in the case of other handicapped students, the visually impaired often do not learn some life skills due to the lack of opportunity for community experiences that non-handicapped students usually have, such as being employed part-time and having social interactions with a variety of people (Scholl, 1973; Brolin & Gysbers, 1979).

Sinick (1979) noted that vocational aspirations of the visually impaired adolescent were inhibited by factors related to self-image. The student in this situation may have "distortions of body-image and self-concept, overgeneralized feelings of inadequacy, over-compensatory mechanisms, dependence/independence dilemmas, family influences. . . " (p. 252).

In some cases, factors related to self-image may affect the employment picture for the visually impaired. Kirchner and Peterson (1979) noted that the visually disabled frequently suffer from poor labor force participation due to "discouragement on the part of significant others—teachers, counselors, even family who may have 'waived' society's work norm for them" (p. 240).

Vocational success is particularly important to the visually impaired since it seems to be correlated with success in other areas. Scholl (1973) asserted that visually impaired individuals, "who find productive employment, tend to be married and participate in a greater number of social and community activities. . . the key to personal and social adjustment for the visually handicapped may lie in their level of economic independence" (p. 88).

The career development process may be hampered by poor career planning practices and inattention to the unique needs of visually impaired individuals. Many such students feel that vocational guidance is done without their active participation and that their competencies and interests are ignored or misjudged. Frequently, guidance programs seek to place the visually impaired in stereotyped occupations (Sinick, 1979: White, Reardon, Barker, & Carlson, 1979). In addition, there is little occupational literature available in forms appropriate for the visually impaired. Many existing career planning programs designed for the general population go unused, although these programs could easily be adapted for use by the visually impaired. The result is that the visually impaired are often not taught job-seeking skills such as finding jobs aligned with abilities and interests (Dickson, 1979).

The Visually Impaired and Vocational Assessment

Accurately assessing career-oriented aptitudes, values, and interests of the visually impaired can be a challenging task. The school psychologists is well-suited for vocational assessment of the visually impaired at the school level since they are already involved in evaluation of this group. As provider of psychological services in the school, the school psychologist has typically dealt with the measurement of cognitive, academic, social, and developmental components of visually impaired students. The school psychologist's training in individual appraisal, human development, and consultation has facilitated evaluative procedures with such populations.

Assessment capabilities of school psychologists are likely to be enhanced by the recent development of doctoral-level school psychology programs with a vocational specialty (Fagan, 1981). In discussing the vocational school psychologist's proposed role, Hohenshil and Warden (1978) listed seventeen competencies for vocational school psycholgists, and several of these are particularly relevant to vocational assessment of the visually imparied: (1) career and human development theory and research, (2) vocational education programs, (3) special education programs, (4) career education, (5) consultation strategies, (6) individual and group assessment strategies, and (7) the unique educational and career development needs of special groups. With such competencies, school psychologists are more likely to effect accurate and useful vocational assessments of the visually impaired.

The utilization of many vocational assessment instruments by school psychologists, and other professionals, with the visually impaired is limited to some degree by the unique characteristics of the population and the nature of the current assessment tools. Many instruments, for example, require vision-related skills from the subject and adherence to time limits. Reproducing written portions of tests in large print can be costly, while other adaptive measures, such as braille and reading tests aloud, are limited when non-verbal materials such as pictures or diagrams are utilized (Bauman & Kropf, 1979). In some instances, a large number of blind students will not be able to read braille (White et al., 1979). In situations where concrete materials can be used, the individual must still be able to use tactile modes effectively.

The visually impaired frequently receive information through the auditory mode. Emphasis upon verbal information, however, can produce problems, too. Vander Kolk (1977) stated that "congenitally blind or early blinded individuals are able to learn words and concepts in a literal, verbal manner without really understanding the concrete functional meaning of the word" (p. 159).

Nonverbal skills of the visually impaired are also important, but assessment of such skills with pictures, diagrams, and tests of dexterity is difficult. Bauman and Kropf (1979) report that assessment of nonverbal learning is hampered by such problems as variation in tactual discrimination among individuals, difficulties in establishing validity with visually impaired populations, and the time and expense of developing norms for the various subgroups of visually impaired.

Swallow (1981) summarized several concerns in the assessment of the visually impaired and states:

> Visual loss compounds the assessment process because of the known interrelationships of sensory, motor, cognitive, and emotional factors. The multiplicity of physical and environmental conditions may contribute systematically to the functional delay of the child. The performance of the student on a standardized assessment instrument may not be a valid indication of skills and abilities. (p. 65)

In the area of vocational interest, there is a tendency for the visually impaired to respond in a certain manner. In presenting interest inventories to this group, Bauman (1973b) pointed out that many respondents will answer test items in terms of the amount of vision they have. An inventory based entirely on content of jobs done or hobbies chosen by blind people has been developed to counter this tendency (PRG Interest Inventory for the Blind, Bauman, 1973a)

Traditional Psychological Assessment Data and Vocational Assessment of the Visually Impaired

Traditional psychological assessment data which has been typically derived from indices of mental functioning, scholastic achievement, personality, and perceptual-motor abilities, provide information relevant to the student's academic status. This kind of assessment, however, can also be the basis for more comprehensive evaluation of the student's vocational status. Such evaluation may include administration of vocational aptitude batteries, career maturity measures, vocational interest inventories, work sampling, and job analysis. Data from these measures and the standard psychological evaluation may be the basis for the development of a vocational component of the I.E.P. Such information might include:

> (1) prevocational training needs, such as work habits and attitudes;
> (2) specific vocational training needs (e.g., whether the student should be given on-the-job training or specific skill training in selected areas);
> (3) most effective training methods to be used with student both in school and on the job; and
> (4) best placement for the student at the end of the program either in specific skill training or on the job (Sitlington & Wimmer, 1978, p. 75).

A Proposed Vocational Assessment Battery for Use with Visually Impaired

Guidubaldi, Kehle, and Murray (1979), acknowledging the complexity of assessing the handicapped, stated that legislative mandates like Public Law 94-142, the need for predicting future performance of the handicapped student, and the demand for information related to intervention, strengths, and limitations, have dictated that such assessment be multifactored. Cognitive, academic, perceptual-motor, social-emotional, and self-help domains are included in multifactored assessment. Other data sources for multifactored assessment might involve observational study, sociometric analysis, parent and teacher interviews, integrated assessment (such as norm and criterion-referenced tests), social integration measures, and work potential assessment.

Recognizing the value of multifactored assessment, a proposed vocational assessment battery for the visually-impaired secondary level student would be composed of a variety of indirect and direct evaluation instruments or methods (see Appendix A).

Summary

The unique and complex nature of the visually impaired population calls for close examination of the process by which career development and vocational assessment within this group occur. The onset of impairment, the nature of the disability, the environmental/social functioning of the individual, and the nature of the original or modified evaluation tool must be carefully considered if accurate diagnostic input and successful vocational strategies are to be realized for the visually impaired student.

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APPENDIX A

A Proposed Vocational Assessment Battery for the Visually Impaired

INDIRECT EVALUATION:

Instrument/Method		
AAMD Adaptive Behavior Scale (School Edition) (Lambert, Windmiller, & Cole, 1975)	Provides measures of independent functioning, responsibility, self-direction, socialization, and economic activity among others.	Has a prevocational section and can be used as part of a parent interview.
Parent Interview/School Records	Allows parental/academic view of student's strengths and weaknesses to be determined: case history information can be accumulated.	Interviews before and after assessment can be useful for intervention purposes.
Medical Record/Report	Ophthalmological status.	Student's degree of vision, previous examinations, and special training can be obtained from this source.

DIRECT EVALUATION:

Wechsler Adult Intelligence Scale-Revised (WAIS-R)-Verbal Scale (Wechsler, 1981) Wechsler Intelligence Scale for Children-Revised (WISC-R)-Verbal Scale (Wechsler, 1974)	Cognitive abilities.	Performance Scale may be used with individuals who have good use of residual vision or slight visual loss.
Wide Range Achievement Test (WRAT) (Jastak, Jastak, & Bijou, 1965)	Scholastic achievement.	Available in large type or braille.
Developmental Test of Visual-Motor Integration (VMI) (Beery, 1967)	Perceptual-motor skills.	Can be used with individuals with slight vision loss.
California Test of Personality (CTP) (Thorpe, Clark, & Tiegs, 1953)	Social and personal adjustment.	Can be administered orally by examiner.
Pennsylvania Bi-Manual Work-sample (Roberts, 1969)	Manual dexterity.	Useful for observation of student in a performance situation rather than a verbal situation: norms available for visually impaired 15 or older.
Valpar Component Work Sample System (VALPAR (Valpar, n.d.)	Work potential.	Has norms for visually-impaired: has samples that look at motivational level.
Strong Campbell Interest Inventory (Strong & Campbell, 1977)	Vocational interests.	Widely-accepted instrument used by psychologists working with visually impaired: the manual for directions is available on tape from Readings for the Blind (RFB).

Vocational Assessment of the Orthopedically Handicapped

*Kenneth L. Sheldon & Laurie DuBose**

Of all the classifications of handicapped students discussed at this conference, the orthopedically handicapped may be the most varied group. Bettmann (1978) defines the orthopedically handicapped as comprising "all anatomical and functional abnormalities of the musculoskeletal system, either manifest at birth, or developing during the growth period (ages 1 to 18), or during the active vocational life (ages 19 to 70)" (p. 503). Orthopedic handicaps most likely seen in the schools would be either congenital handicaps not corrected by early medical intervention or permanent handicaps resulting from accident or disease during the growth period. Examples would be juvenile rheumatoid arthritis, cerebral palsy, muscular dystrophy, spina bifida, Friedrich's ataxia, poliomyelitis, amputations, and spinal cord injuries. A number of other handicapping conditions may have an orthopedically handicapping component (e.g. brain injury and epilepsy). Acute types of orthopedic handicaps such as fractures or temporary injuries resulting from daily living activities should not affect ones' career development and decision-making program in a permanent way.

Because of the variability associated with this group of handicapped individuals, no one set of charateristics can be listed that affect the career development—decision making process. The affects of an orthopedic handicap on career planning are dependent on the nature, severity, and location of the handicap. For example, students with cerebral palsy may have relatively intact upper extremity control while the lower extremities are most affected, or the individual may have a more severe form which affects all extremities plus speech and vision. Each necessitates a unique set of career decisions and assessment approaches. Further, amputations, be it from disease or accidental injury, come in all forms. Depending on the location of the amputation, the affects on career development and decision making would be different. Some of the orthopedic handicaps are progressive (e.g. juvenile rheumatoid arthritis, muscular dystrophy, and Friedrich's ataxia). Career development and decisions would need to be projected, taking into account the progressive factor. For all orthopedic handicapping conditions, then, each individual to be vocationally evaluated would have a unique set of characteristics. To determine the characteristics and the affects on vocational assessment, certain information will be needed.

Effects on the Vocational Assessment Process

Much of the pertinent information is readily available in the student's records which may include social histories, academic achievement levels, medical data, and psychological assessments. Information relative to the vocational assessment process can be grouped into two general categories: Known Facts and Unknown Facts. The ***Known*** facts relate to information which is already available and requires little or no extra testing or evaluative measures. Valuable information can be gained through discussing the Known factors with the student, parents, and teachers ***prior*** to beginning any assessment program. ***Unknown*** factors are those which have yet to be determined through the vocational assessment process. The ***Known*** factors given careful consideration ***prior*** to evaluation of the Unknown factors are:

1. Geographical locations.
2. Housing.
3. Transportation.
4. Environmental restrictions.
5. Medical restrictions.
6. Communication skills.
7. Psychological and educational assessments.
8. Adaptive equipment/special needs.
9. Past work experience, if any.

Unknown factors to be determined would include:

1. Specific skill areas.
2. Vocational choices.
3. Performance speed and accuracy on selected work samples.
4. Comparative equivalents between evaluated performance scores and normative data.

The eventual career decisions and development program for the student will result from careful consideration of each of the Known and Unknown factors that have been identified. Once the ***need*** for vocational assessment has been established, a psychological and academic evaluation should be completed.

Traditional Psychological Assessment Data

Psychological assessment of the orthopedically handicapped must, if needed, be modified according to the nature of the handicap. The "traditional" psychometric instruments can be used in part with modifications or in their entirety. As with all psychological testing, the most important information gleaned concerns individuals' strengths and weaknesses, learning style, potential, and levels of functioning. The existing norms for the tests are used as comparison, but the examiner must be aware that the norms in all probability are not based on the specific population discussed in this paper. As with all psychological testing, the examiner must rely on a degree of common sense. The type of testing one does depends on what specific information is needed. Those doing psychological testing to aid in career decision making and development must also familiarize themselves with the types of skills and abilities required for vocational success. Sheldon and Prout (1982) have identified necessary questions one should ask and address in psychological report writing for vocational purposes. In the sequence of vocational assessment, the psychological evaluation should be a first step to determine how to proceed in the career decision making and prevocational evaluation process.

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Intellectual assessment. The traditional intelligence tests can be used with the orthopedically handicapped. Most often used at Woodrow Wilson Rehabilitation Center are the Wechsler scales, Peabody Picture Vocabulary Test (PPVT), Raven Progressive Matrices, and the Wechsler Memory Scale (WMS). When using the Wechsler scales, the Performance section may not be appropriate. If the individual has in addition to the orthopedic handicap an expressive speech problem, the PPVT and Ravens may be utilized. The WMS has been found to be an important instrument to determine current learning potential and to identify learning styles and deficiencies. The results of any of the above are interpreted in the traditional way. The specific norms are used as comparisons, but the individual's performance should be viewed on an individual basis taking into consideration the handicapping condition.

Academic assessment. Most of the common academic tests are used and include the Wide Range Achievement Test (WRAT), Nelson Reading Test, and the Peabody Individual Achievement Test (PIAT). If specific academic problems are identified, tests such as the Key Math and Spache are administered.

Perceptual-motor assessment. Depending on the handicap, the Visual Motor Integration Test, Bender Gestalt, or the Motor Free Visual Perception Test are routinely used. Normative data are used to determine the approximate developmental level of the individual and as a screening device to determine if visual-perceptual or perceptual-motor problems exist.

Interest inventories. The traditional interest inventories such as the Kuder, Strong, and Wide Range Interest and Opinion Test (WRIOT) are sometimes used to determine an individual's particular interests. Interpretation of the results must be made with caution as many times the tested interests are unrealistic due to the limitations of the handicapping condition.

Personality assessment. Projective tests such as the Rorschach, Minnesota Multiphasic Personality Inventory (MMPI), House-Tree-Person (H-T-P), Draw-A-Person (DAP), Thematic Apperception Test (TAT), or Hand Test can be administered. Some modifications such as reading the MMPI statements and recording individuals' responses may be needed.

Behavioral observations. The importance of behavioral observations cannot be overstressed. The vocational school psychologist should become familiar with the behaviors required for successful work experience and observation of these and others should be completed throughout the entire vocational assessment process. A behavior identification form has been developed by the Materials Development Center at the University of Wisconsin-Stout and is highly recommended (Appendix A).

Interviews. As noted earlier, interviews with the client, parents, and teachers are essential to the vocational assessment process. The interview can be structured around what has been listed as Known Facts as well as more "clinically-related" topics. It is important to determine the individual's acceptance of his/her handicap and to determine how realistic his/her goals and vocational interests are.

All or selected parts of the above can be completed to get a picture of the individual's functioning level, learning style, behavior, emotionality, and interests. The data obtained will need to be integrated into a report identifying potential problems and vocational assets. Recommendations based on the data and a helping of common sense can be provided to facilitate the career development and decision making with the individual.

A Proposed Vocational Assessment Procedure

It will be the responsibility of each secondary school unit to set up and establish their own evaluation process and assessment tools and techniques. The purchase of preassembled, prepackaged evaluation systems is ***NOT*** necessary to do this. The systems (often referred to as "packaged systems") seldom meet the evaluation needs of a disabled population and often require the innovation and imagination which would be required to establish your own system. The majority of "packaged systems" are normed on a small and isolated population that does not include handicapped or disabled clients. Administration procedures are often restrictive and unrealistic when applied to employers' actual expectations of new employees.

One possible benefit of purchasing the "packaged system" is the already established normative data which comes with it; however, the drawbacks of this so-called normative data have been mentioned above. It can be helpful in determining where the client's performance falls within these guidelines. It is important to note that the secondary school's own normative data can be collected and established within the school system itself. Once work samples have been designed and set up, the average student population can be called upon to go through the evaluations to determine the baseline requirements needed for the norms. Such an approach would undoubtedly prove more economical as well as realistic in the long run. A side benefit of approaching a program design in this manner would be to create student body interest and participation in the prevocational assessment program.

Evaluation tools, with a little thought and imagination, can be found within the existing school resources. This would require a minimum expenditure of funds for supplies and equipment. Home economic and trade shop areas are excellent sources of work samples. Business and academic instructors can develop baseline work samples to evaluate clerical and related business occupations. Faculty involvement should result in the development of a wide range of work samples which can effectively be used to gain the desired information. Sitlington and Wimmer (1978) provide an outline of procedures to use in setting up a vocational assessment program.

Another important resource for on-site evaluations in specific job areas is the local community. Should a student demonstrate the interest and potential for a specific vocational objective, a trial period of training or evaluation could be set up utilizing the community resources. Garden Centers, veterinarians, department stores, grocery stores, the Chamber of Commerce, and local contractors, to name a few, could be approached as possible resources. Time requirements for these trails could vary from one day to six months depending on the special needs of the student and the degree of difficulty of the particular job.

A good resource catalog to assist in the task analysis of a particular job is the ***Occupational Outlook Handbook.*** This handbook is updated every few years and gives the basic job requirements for a vast number of jobs. Specific requirements are listed for educational level, physical, and environmental conditions. An additional resource to have on hand is the ***Dictionary of Occupational Titles*** which is more complete and provides a breakdown of the available jobs throughout the country. Finally, the short paper by Nadolsky and Wine (1975) may prove helpful in setting up and designing the individual work sample units.

As reference material, these catalogs provide valuable information which is needed to determine if a particular vocational objective will be realistic or not. For example, a job which requires rapid, alternating movements of both hands would not be suitable for someone who had no use or limited use of one hand. Additionally, a job which required climbing, jumping, and related physical feats would not be suitable for someone with limited or no use of their legs. As noted earlier, this is where the all important Common Sense enters into the picture. It is ***not*** helpful to encourage an interest which will prove unrealistic in the final analysis.

In addition to using the business community for evaluative purposes, these same resources can be utilized as information centers relating to job ***requirements.*** Although the resource material listed above is helpful in providing general information, businesses have their own way of doing things. If a student is interested in placement in the home community in a specific area and he/she demonstrates potential for that job, prospective employers can be contacted to determine the job specifics to provide a more on-target evaluation.

All employers are concerned with work being completed accurately and in a timely fashion. Further, it is important that the student/employee demonstrate acceptable work habits and the ability to relate to supervision. If students perform below the speed and accuracy standards determined by the developed standards, it will be important to attempt to determine their ability to improve those skills through practice or different teaching techniques. Work habits relative to successful employment in ***any*** position should be assessed and modified, if needed. Much of this information may be available through interviews with the students' teachers and through the psychological testing results. The attached sheet offers some guidelines to look for during the evaluation process. If a student demonstrates significant problems in any of these areas, counseling and possibly some shaping techniques may be needed to improve performance in these areas. Those areas which are disability related (e.g. speed in performance, neatness in written work, etc.) should be noted and plans made accordingly. The use of adaptive equipment or job modifications can be considered as ways to increase students' skills and overall employability. It may be that a built-up pen may be all that is needed to help the sloppy writer be more neat, for example.

Finally, some general comments relating to continuing education or planning to pursue higher levels of education are in order. Those students, in general, who are severely physically impaired and who possess strong intellectual capacities should be encouraged to pursue higher level educational areas commensurate with their physical abilities. Those students who show minimal physical involvement, yet are not strong intellectually, should be encouraged to attend vocational technical programs or on-the-job training situations. Students who do not demonstrate and are unlikely to develop physical or mental capabilities should not be encouraged to pursue competitive employment. Involvement in community resource programs, sheltered workshops, volunteer activities, and avocational interests should be encouraged. Those students who demonstrate minimal orthopedic involvement will probably not need a special vocational assessment program and, therefore, will not usually be an issue of concern. Should they become involved in a program of this nature, probably a wide range of vocational options will be available and these cases will be viewed as "easy" ones.

The task of vocational assessment is involved if the results are to be helpful. School psychologists, guidance counselors, teachers/instructors, and the students' cooperation and joint efforts will be required to make the program work. When initially setting up the program, consultation from established vocational evaluation settings might be considered. Information, resource material and suggestions could be provided. Once started, as with any program designed to work with individuals, the assessment tools and procedures may need to be changed or modified to more fully meet the program goals.

A Caution

COMMON SENSE AND "GUT REACTIONS" are musts in assimilating and applying evaluation results in the most constructive manner. Although subjective in nature, these senses should be given equal, or more, weight in the decision making procedure. Objective data will provide guidelines for vocational avenues to pursue; however, the final decision must take into consideration the experience of the evaluator, common sense application of the material, and the evaluator's "gut feeling" about making a particular recommendation. Recommendations based on the normative or objective data alone are rarely of realistic benefit and are often harmful in encouraging a student to pursue a goal which will ultimately prove unsuccessful.

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The Behavior Identification Format can be ordered from:
Materials Development Center
Department of Rehabilitation and Manpower Services
School of Education-University of Wisconsin-Stout
Menomonie, Wisconsin 54751

Appendix A
WORK HABITS AND BEHAVIOR IDENTIFICATION FORM

NAME **RATER**

VOCATIONS COVERED **PERIOD COVERED**

Category	M	T	W	Th	F	Behavior	RIG
1. Punctuality - Attendance						a.m. Break p.m.	
2. Hygiene, Grooming, & Dress							
3. Amount of Supervision Required After Initial Instruction Period Follows Instructions Initiative							
4. Steadiness or Consistency of Work Distractibility On Task Task Completion							
5. Request for Assistance from Supervisor							
6. Reaction & Response to Supervision, Criticism & Pressure Accept Criticisms Staff Relations							

COMMENTS:

Category	M	T	W	Th	F	Behavior	RIG
7. Work Method & Organization of Tools & Material							
8. Reaction to Unpleasant or Monotonous Tasks Work Tolerance							
9. Ability to Cope with Work - Frustration Tolerance Work Tolerance							
10. Reaction to Change in Work Assignment							
11. Communication Skills as Related to Work Needs							
12. Social Skills in Relations with Co-Workers Peer Relations							
13. Personal Complaints							
14. Odd or Inappropriate Behaviors Irritating Habits							
15. Conformity to Shop Rules & Safety Practices Safety Awareness							
16. Work Energy & Stamina							
17. Work Speed							

COMMENTS:

General Ratings:

/ indicates *satisfactory* or average
x indicates *unsatisfactory* and unlikely to improve.

/- indicates below average but workable.

Vocational Assessment Procedures for Handicapped Blacks

*Edith Kelsey**

During the formative years of adolescence, all students need assistance in increasing self-understanding and their knowledge of the world of work. Secondary school psychologists, whose primary goal is to assist students in capitalizing on strengths, realizing weaknesses, and overcoming those weaknesses if at all possible, have vocational assessment as a major responsibility.

In considering vocational assessment for students, there are many procedures and generalizations that can be made from the "typical" psychological evaluation. Yet, when evaluating black students, there are pertinent factors that must be kept in mind.

Realities of Society

High unemployment, underemployment, discrimination, and the unavailability of a variety of occupational experiences are facts of life for the black individual. Unemployment rates of 40% and higher for black youths have been common since the mid 1970's. Typically, minority youth employment is more than twice that of white youth and, if handicapped also, the picture is even more dismal.

Underemployment is another problem. According to a study based on information from the 1970 Census, "blacks are underrepresented in all except the lowest level of work" (Gottfredson, 1978, p. 217). Picou and Campbell (1975) reinforce this fact and contend that blacks are concentrated in jobs that pay less, are not unionized, and are very competitive in our present day society. If a large majority of white, middle class, liberal arts graduates are moving into semi-professional positions as a result of the present economic situation, what of the black individual?

Racism is a reality and unfortunately serves to limit career options for blacks. Williams (1972) suggests that, "as a result of racism, many occupations are closed and other occupations have quota systems" (p. 233). Consider a young black female from a working class family. She has been trained in broadcasting, has no cash reserve to relocate, and seeks employment at the only radio station in a fifty mile radius of her hometown. The manager of the station interviews the individual, explains how, although she is qualified, the one "token" position is filled, and offers her a clerical position. The options available to this individual are clear: Take the clerical position in hope that at some later time the position aspired to is available, or consider moving to another locality.

From a vocational theory framework, Ginzberg, Ginsburg, Axelrod & Herma (1951); Roe (1956, 1972); Super (1957); and Super & Overstreet (1960) emphasize the importance of role models and significant others. Results from research (Pallone, Rickard & Hurley, 1970, 1973; Uzzell, 1961) indicate that influencers of occupational choice are significant others and individuals who are employed in the type of job that is aspired. If an EMR black high school senior has only come into contact with a majority of blacks in food services, the possibility of that student seeking a job in that field, despite other personal interests, is high.

All of these realities impact on the career decision-making process as well as the attitudes about work for blacks. The question is: What can the school psychologist do to insure a valid vocational assessment for this group of youths? Considering that the school psychologist is competent, responsible, and has a high degree of professional ethics, the answer lies in facilitating authentic relationships with black clients and relating pertinent, realistic information to them.

Examiner Considerations and Self-Assessment

There are cultural barriers that can hinder the assessment process. Vontress (1969) discusses barriers related to counseling relationships that apply here. They are as follows: a) the reciprocal racial attitudes of both parties concerned, b) the counselor's ignorance of client's background, c) the language barrier, d) the client's lack of familiarity with counseling, e) the reservation about self-disclosure, and f) the sex and race taboo. All of these may impact upon the situation, so it is imperative that examiners actively examine personal racial feelings, be cognizant of ethnicity, and consciously strive to have authentic relations with black clients.

Feelings and attitudes can be examined objectively or subjectively, individually or in a group. Vontress (1971) makes a point that can be generalized here: "black and white races meet and greet each other with perceptual distortions, anxiety, and hostility - all of which constitute barriers. The difficulties stem not so much from race, per se, but from implications of being black in a society that assigns secondary status to American Negroes" (p. 12). There are certain attitude scales available that can aid in helping the examiner get in touch with his or her personal feelings and attitudes. The ***Situational Attitude Scale*** by William E. Sedlacek and G. C. Brooks, Jr. (1972) is one of these. The assessment of attitudes of one race toward another appears crucial in a better understanding of race relations (Sedlacek and Brooks, 1972).

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Vontress (1969) also suggests in-service type programs designed to examine attitudes toward the culturally different. Specifically, "the tester should analyze his thinking about minorities in view of broad assumptions generally made by the majority populace" (Scales & Smith, 1974, p. 176).

When examining personal feelings and attitudes, individuals responsible for administering tests should be careful to avoid stereotyping blacks. Stereotyping is a natural method of assigning general ideas to a group as a way of understanding, yet, when opinions are oversimplified, affective attitudes and uncritical judgments negatively affect minorities. As a method of objectively viewing a group, becoming cognizant of ethnicities is recommended.

Ethnicity is that portion of cultural development that occurs before the individual is in complete command of his or her abstract intellectual powers, and that is formed primarily through the individual's early contacts with family, neighbors, friends, teachers, and others, as well as with his or her immediate environment of the home and neighborhood (Longstreet, 1978). When developing an ethnic profile, Longstreet suggests that aspects of verbal and non-verbal communication, orientation modes (acquired, nonverbal behaviors including certain patterns of body movements, without any intention of communicating), social value patterns, and intellectual modes (how people have learned to learn) be examined. There are methods to accumulate this vital information. They are: anecdotal observation (e.g., an experience an individual has had that he or she feels is interesting or important enough to tell someone else about); informal observation (e.g., data collected from a published work based on a collection of observations that the author tries to summarize and interpret); formal observation (e.g., an account prepared in some purposeful fashion for public consumption); structured observation (e.g., data collected according to systematically established procedures that can be clearly and empirically described); and experimental observation (i.e., has all the characteristics of the structured observation, but implies some control over the conditions in the situation being observed).

In the area of consciously facilitating authentic relations, there are certain assumptions and behaviors outlined by Lee and Schmidt (cited in Beck, 1973). These are:

I. ***Assumptions***
   A. People count as individuals.
   B. Blacks are human—with individual feelings, aspirations, and attitudes.
   C. Blacks have a heritage of which they are proud.
   D. Interdependence is needed between Whites and Blacks.
   E. Whites cannot fully understand what it means to be Black.
   F. Whiteness/Blackness is a real difference but not the basis on which to determine behavior.
   G. Most Blacks can handle Whites' authentic behavior and feelings.
   H. Blacks want a responsible society.
   I. Blacks are capable of managerial maturity.

II. ***Behaviors***
   A. Directness and openness in expressing feelings.
   B. Listening without interrupting.
   C. Demonstration of interest in learning about Black perceptions, culture, etc.
   D. Staying with and working through difficult confrontations.
   E. Assuming responsibility for examining your own motives and where you are (personally).

Assessment Procedures

Relating pertinent, realistic information to blacks concerns factors related to test selection, administration, interpretation, and vocational guidance and counseling. The examiner should be familiar with a variety of vocational assessment techniques, so as not to administer a "usual" battery because of being comfortable with it. An assortment of vocational instruments are discussed in texts by Andrulis (1977) and Samuda (1975), and these should become part of a school psychologist's professional library. Since any instrument normed on the majority places a minority at a distinct disadvantage, informal assessment tools such as the Appalachia Educational Laboratory's ***Aptitudes Checklist, Work Situations Checklist,*** and ***Work Activities Checklist*** are recommended. These tools not only give the clients information about themselves, but keys this information to occupational information. This comprehensive career information system is structured around 12 career areas and 66 worker trait groups.

Validity, reliability, adequacy of norms, and the appropriateness of reading level should be carefully examined. The Equal Employment Opportunity Commission published a pamphlet entitled ***Guidelines on Employment Testing Procedures*** (1966) which suggests that only instruments validated for special client groups may be free from bias. Since norms have not generally been developed for many of these groups, it is recommended that persons who utilize tests choose instruments that decrease the possibility of cultural differences affecting test performance such as work sampling. Currently, what constitutes a "culture-fair" test selection involves value judgments. Therefore, selection of tests should be based primarily on the suitability of the chosen instruments for the purposes for which they are designed (Lennon, 1962).

Acquiring biographical data and having an evaluation interview (e.g., a face-to-face discussion concerning the individual's rationale for seeking vocational assessment, expressed interests, and personal idea of a life role) is pertinent prior to test administration. Nadolsky (1981) suggests that procedures such as these "are not used to render a definite decision regarding the individual's vocational potential. Rather, they are used to assist the evaluator in understanding the general assets and limitations of each individual served and to establish a consistent basis for individualizing the experimental phase of the vocational evaluation process" (p. 6).

Test interpretation for black clients should be relevant to what the individual is seeking from vocational assessment; the individual may be seeking personal growth, or have been referred by others. Regardless of the rationale, the examiner should strive to provide concise, realistic information in terms that the individual can understand. A major factor is considering whether the client is concerned primarily with survival skills or career development, defined by Seligman (1980) as a process which encompasses the total life span and includes all of an individual's roles and positions. Test interpretation should be done with professional ethics and, as Samuda (1975) indicates, with a thorough understanding of the sociocultural background of the group being tested. Therefore, the examiner has a responsibility to learn to relate to the black client so as to provide realistic and useful information.

Although vocational guidance and counseling may be seen as a role for the counselor and not the school psychologist, it is pertinent to vocational assessment. First and foremost, the examiner must possess a knowledge of current economic trends. In light of current unemployment rates and inflation, the situation is not optimistic concerning most types of employment. Since the minority population is adversely affected by declining labor market trends, it is essential that school psychologists recommend occupational information that will enhance and broaden career selection for black youth. Ellerbe (1975) contends that "career selection is crucial for Black Americans and should be correlated with economic, political, and social worth" (p. 124).

Attitudes that blacks may have concerning the world of work should be kept in mind by the examiner. Of course, not all members hold to a certain belief, but the American society has perpetuated the deficit orientation (i.e., something is wrong with an individual if speech is different, color is different, etc.) which has affected the job opportunities available for blacks. This is what has contributed to pessimistic attitudes. Also, motivation may be negatively affected by pessimism.

The school psychologist involved in vocational assessment should also consider the construct of "increasing realism of choice" concerning the change in adolescents from goal-centered fantasy, to mean-centered, which is realistic concerning occupational choice. Although theories of vocational development should be examined carefully, this construct is particularly interesting. In a study that measured this, it was indicated that, as black youth mature, occupational expectations become lower (Cosby, 1974). In actuality, this infers that external realities may influence an individual's manner of evaluating personal strengths and weaknesses. In other words, there may be the tendency of a black client to be more concerned with society's barriers than individual interests and strengths.

Conclusion and Implications

In summary, it is hoped that this paper has pointed out factors that will enhance the vocational assessment of blacks. These points outlined not only are relevant to blacks but other minority groups in our society as well. There are implications that can be made from the various points mentioned. They are as follows:

1. There are psychometric problems with standarized vocational assessment instruments as with other psychological testing ones. Therefore, those who are responsible for administering these measures should accumulate special group norms and feed them back to test publishers to include in revisions of test manuals. This would definitely aid in helping to build the body of knowledge so desperately needed by test users.
2. There is need for additional research concerning vocational assessment of the black population.
3. Social problems influence all minority assessment. Assessment, per se, will yield more valid information if examiners view minorities as culturally different rather than focusing on negative deficit aspects.

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Prevocational Assessment: Applications for Elementary, Middle, and Junior High School Students

*David C. Solly**

As school psychologists, we have consistently maintained a goal of expanding and improving our services to school aged children. From this professional commitment, we have the birth of two distinct specialities in the field: Early Childhood and Vocational School Psychology (Guidubaldi, 1982). Although specialists are being trained in these areas, most school psychologists remain general practitioners, and it is reasonable to predict that most of these generalists will be called upon at one time or another to work with preschool children or students who are destined for vocational programming.

While the field of vocational school psychology has grown rapidly within the past five years, its growth cannot match that of vocational education programs for the handicapped. With this new growth and direction in special education programming, it becomes increasingly important for school psychologists to be versed in vocational programming strategies and in vocational assessment procedures for the handicapped.

A long standing fallacy in the perception of vocational education, and in a more general sense, career development, is that it is a process that is limited to the high school environment. Historically, special needs students have been directed toward vocational programming only when they reach the eleventh grade or become too old for existing special education services. Career development, however, is a life span process, much the same as cognitive, social, emotional, or motor development, and is interwoven with these domains. It does not begin at any one particular age or developmental level (Bender, 1973; Bottoms & O'Kelley, 1974; Fagan & Hohenshil, 1976; Hummel & Hohenshil, 1974; Phillips, 1977). From birth onward, the child develops interests, likes and dislikes, and encounters experiences which affect his or her perceptions, decisions, and decision making processes.

As children in general, and handicapped children in particular develop, their vocational needs should be addressed, as well as their needs in cognitive, motor, and affective areas. Vocational needs should be addressed as a component in the special education process throughout the child's educational career. In addressing these needs, both evaluation and programming strategies are required.

Poplin (1981) stresses that vocational evaluation is an essential part of the evaluation process if placement in a vocational program is a possibility. She adds that I.E.P.s should contain long term goals relating to skills required for employability, and that career education and vocational education objectives and goals should be included throughout the I.E.P. process.

It is clear that vocational education and evaluation must be extended to include handicapped students at all age levels. The school psychologist must become actively involved, and in many cases, assume a leadership role in the development and implementation of a vocational assessment process.

While there is little in the literature on vocational assessment strategies in general, virtually no attempts have been made to prescribe a prevocational assessment strategy for young handicapped individuals. Following are some rationale and guidelines for school psychologists in assessing the vocational and prevocational competencies of elementary, middle, and junior high school students. As with psycho-educational assessment in general, there is no ideal assessment system; no pat answers to questions regarding assessment. In prevocational assessment, it is of greatest importance to understand what it is that we are assessing, and to select the most appropriate instruments and procedures to achieve our assessment goals.

Prevocational Skills: Defined and Targeted

Prevocational skills have been defined and perceived in many different ways (Guidubaldi, Kehle, & Murray, 1979; Harren, 1980; Hummel & McDaniels, 1979; Scharf, 1970; Seligman, 1980; Super & Crites, 1962; Walls & Werner, 1977). While some authors view prevocational skills as only comprising social skills, others point to job seeking skills and low level basic job skills. More appropriately, these skills represent a great combination of factors. ***Prevocational skills*** can be defined as ***all skills required for an individual to pursue appropriate vocational training which leads to subsequent employment.***

Prevocational skills can be divided into three major categories: social skills, performance skills, and career development. Of these three areas, psychologists are probably most familiar with the first two. Social skills are those adaptive behaviors which an individual needs to be successful in vocational training and employment. They include tolerance in a work situation, self expression, and ability to deal with peer and authority relationships. Performance skills are aptitudes or the individual's ability to perform certain types of tasks. Career development includes the individual's interests, knowledge of the world of work, decision-making skills, and in a broad sense, the individual's understanding of the relationship between education and employment. The three areas, however, are not mutually exclusive.

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Assessment Goals and Strategies

Prevocational assessment goals, strategies, and methods must necessarily differ with varying age levels and types of handicaps. In general, prevocational assessment consists of traditional psychometric measures, adaptive behavior measures, interest inventories, specific aptitude measures, and observational assessment.

At the ***Early Elementary*** or ***Primary Level*** (ages 5-8), traditional psychometrics and adaptive behavior measures should be emphasized. Intelligence tests provide us with information on general functioning level, areas of specific strength and weakness, and a prognosis as to the potential level of vocational training and employment. Instruments such as the WISC-R and McCarthy Scales of Children's Abilities can also be useful in providing data on the student's self expression skills, memory, and manual and finger dexterity. Adaptive behavior measures, observational assessment, and teacher ratings present a picture of the child's social skill development, interests, and knowledge of the world of work. At this age level, we are seeking general information on the appropriate type, level, and scope of potential vocational training, and targeting long term classroom goals which relate to prerequisite vocational skills.

At the ***Intermediate Level*** (ages 9-12), traditional psychometrics continue to be of importance, providing information on abilities and achievement as well as the appropriateness of the program. Again at this level, tools such as the WISC-R can be of primary value in assessing the expression, memory, and dexterity skills that have long been associated with vocational training.

Social skills and career development assessment begin to assume a more prominent role at the intermediate level. It is at this level that we can begin to accurately assess interests with standardized instruments. Teacher ratings, observations, parent/child interviews, and sociometry can also provide valuable information on the student's interests and social, performance, and decision-making skills.

At the intermediate level, and continuing through the early secondary level, it is our primary goal to assess and target those skills which are necessary for the student to select and pursue an appropriate career. Factors to be considered in the assessment and in the I.E.P. include peer relationships, ability to follow directions, ability to communicate ideas and ask for help, accuracy, dexterity, safety, ability to make decisions, and the knowledge of the settings, requirements, and components of different types of work (Weisgerber, Dahl, & Appleby, 1981).

At the ***Early Secondary Level*** (ages 13-16), we become more concerned with specific aptitudes and interests in preparation for full scale vocational training. Traditional psychometric procedures such as intelligence and achievement testing are de-emphasized, while interest inventories and aptitude batteries gain an increasingly important place in assessment. Social skills remain an important factor in areas such as cooperation, attendence, and punctuality. These skills are measured in an ongoing observation/teacher rating format most effectively. The prevocational assessment strategies at the early secondary level are a logical stepping stone between the earlier predictive-prescriptive measures and the work sampling techniques of later vocational education and vocational rehabilitation.

Ideally, exploration options should be included at the early secondary level which provide the student with short term hands on experience in a number of vocational training areas. Assessment in this type of training format would most precipitously consist of a small scale work sample or work evaluation system designed to simulate the task and meet the needs of the particular vocational program. Where such favorable conditions do not exist, general and specific aptitude test batteries can be employed, along with observation/behavior rating in a variety of real or simulated activities which relate to specific types of vocational training.

Assessment Techniques

Apart from the traditional psychometric procedure to which school psychologists have become so accustomed, prevocational assessment requires additional measurement techniques to provide a comprehensive, accurate, and useful picture of the individual. Adaptive behavior measures, interest inventories, aptitude measures, and observational assessment are all a part of the prevocational assessment battery. Prevocational assessment should have a team approach, with data being supplied by psychologists, counselors, teachers, parents, and the student or his or her peers.

Of the group of prevocational assessment techniques, observational assessment probably provides the data of greatest overall value. Various observational techniques can be used to reflect the student's educational needs in relation to available programs and desired or marketable competencies. Observational assessment combines the data and ratings of counselors, parents, and psychologists, and often incorporates sociometry or a peer rating system. (For a detailed treatment of sociometry and sociometric matrices, see Guidubaldi, Kehle, & Murray, 1979 and Kerlinger, 1973.) In many cases, a comprehensive interview can provide information on interests and attitudes which is as accurate and appropriate as that provided by standardized inventories.

At this time, direct observation and parent and teacher ratings are the most appropriate ways of assessing career development components such as knowledge of the world of work, decision-making skills, and the student's understanding of the education-occupation-life goals relationship. Observational techniques are also of value in assessing the interests of very young and low functioning children.

Interest inventories and aptitude batteries can also be very useful, but many are limited in their applications to young and severely handicapped children because of the required reading levels and the lack of normative data for students who are below the secondary school age level. While some of these instruments can be administered orally, the observation/interview paradigm is preferred when the applicability of standardized instruments is in question. Various general aptitudes can be assessed through specific subtests of the WISC-R and McCarthy Scales of Children's Abilities as well, providing a criterion referenced data base for developing vocationally relevant I.E.P. goals and objectives.

Adaptive behavior scales are the most fertile ground of existing techniques in the area of prevocational assessment. Instruments such as the AAMD Adaptive Behavior Scale and the Behavioral Characteristics Progression can be used effectively alone, or in combination with observations and ratings to assess many prevocational social skills areas.

Although prevocational assessment is a very new frontier, and as such is open to much selection, revision, and growth, one must have a point at which to begin. Thus, several guidelines are proposed. Tables 1 & 2 present suggested batteries and applications of selected techniques in prevocational assessment. Other assessment instruments are outlined in Andrulis (1977) and Cronbach (1970). The potential user is urged to view all with a critical eye, and to select and adapt instruments and procedures as particular situations, individuals, and circumstances demand.

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Table 1
SUGGESTED PREVOCATIONAL ASSESSMENT BATTERIES*

Age Range	M.R.	L.D.	Physically Handicapped
Early Elementary (ages 5-8)	1. WISC-R, McCarthy Scales, or Binet 2. AAMD-ABS or BCP 3. Interview 4. Observational Assessment a. Teacher Rating b. Direct Observ. c. Parent Intervw.	1. WISC-R or McCarthy Scales 2. Achievement 3. Interview 4. WSSAB 5. Observational Assessment a. Teacher Rating b. Direct Observ. c. Sociometry d. Parent Intervw.	1. WISC-R or McCarthy Scales 2. Achievement 3. Interview 4. WSSAB 5. Observational Assessment a. Teacher Rating b. Direct Observ. c. Sociometry d. Parent Intervw.
Intermediate (ages 9-12)	1. WISC-R or Binet 2. AAMD-ABS or BCP 3. VPI (oral if necessary) 4. Interview 5. Observational Assessment a. Teacher Rating b. Direct Observ. c. Sociometry	1. WISC-R 2. Achievement 3. WSSAB 4. HOOI or VPI 5. Interview 6. Observational Assessment a. Teacher Rating b. Direct Observ. c. Sociometry	1. WISC-R 2. Achievement 3. EAS 4. HOOI or VPI 5. Interview 6. Observational Assessment a. Teacher Rating b. Direct Observ. c. Sociometry
Early Secondary (ages 13-16)	1. NATB 2. RVII or PII 3. Simulated Work Sample/Eval. w/observation 4. Observational Assessment (if #3 not included) 5. Teacher Rating or Sociometry 6. Interview	1. GATB or NATB 2. HOOI 3. Simulated Work Sample/eval. w/observation 4. Observational Assessment (if #3 not included) 5. Sociometry 6. Interview	1. GATB or NATB 2. HOOI 3. Simulated Work Sample/eval. w/observation 4. Observational Assessment (if #3 not Included) 5. Sociometry 6. Interview

*Key to Prevocational Assessment Instruments

AAMD-ABS: AAMD Adaptive Behavior Scale
WSSAB: Weller-Strawser Scales of Adaptive Behavior for L.D.
EAS: Estes Attitude Scales
HOOI: Hall Occupational Orientation Inventory
RVII: Reading-Free Vocational Interest Inventory
BCP: Behavioral Characteristics Progression
VPI: A&W Vocational Preference Index
GATB: General Aptitude Test Battery
NATB: Non-reading Aptitude Test Battery
PII: Picture Interest Inventory

Table 2
SELECTED TECHNIQUES FOR ASSESSING PREVOCATIONAL SKILLS

Prevocational Skill	Age Range	Technique	Special Applications
Self Expression	5-8	McCarthy	Test 4, 15
	5-10	BCP	Low Functioning
	6-16	WISC-R	Vocab, Sim, & Comp.
	6-16	WSSAB	L.D. Students
	5-16	Teacher Ratings & Observation	
Sociability	7-12	EAS	
	6-16	WSSAB	Limited Application
	5-16	Teacher Ratings, Observation	
Tolerance	5-8	McCarthy	General
	6-16	WISC-R	General & Performance
	12-16	GATB	General
	14-16	NATB	Gen. (Non-readers)
	5-16	Teacher Ratings, Observation	
Work Habits	5-8	McCarthy	General
	6-16	WISC-R	General
	5-16	Teacher Ratings, Observation	
Direction Following	5-8	McCarthy	Tests 1, 8, 9, 10, 11, 16, 18
	6-16	WISC-R	P.A., B.D., Coding
	12-16	GATB or NATB	General
	5-16	Teacher Ratings, Observation	
Attending/Distractibility	5-8	McCarthy	Tests 1, 2, 5, 6, 7, 11, 14, 16
	6-16	WISC-R	General
	5-16	Teacher Ratings, Observation	
Manual Dexterity	5-8	McCarthy	Tests 2, 6, 8, 10, 12, 13
	6-16	WISC-R	P.A., B.D., O.A.
	12-16	GATB	Tests K & M
	5-16	Teacher Ratings, Observation	
Finger Dexterity	5-8	McCarthy	Tests 1, 16, 18
	6-16	WISC-R	B.D., O.A.
	12-16	GAB	Test F
	5-16	Teacher Ratings, Observation	
Physical Strength	5-16	Teacher Ratings, Observation	
Educational Awareness	7-12	EAS	
	6-12	CMI	*Lengthy Administration
	5-16	Teacher Ratings, Interview	
Career Awareness	5-16	Teacher Ratings, Interview	
Decision Making	5-16	Teacher Ratings, Observation	Simulated Activity
Interest	5-16	Interview	
	8-16	VPI	
	8-12	HOOI	3-7 grade edition
	12-16	PII or RVII	Non-readers
	14-16	OII	

SELECTED PREVOCATIONAL ASSESSMENT INSTRUMENTS

Adaptive Behavior Measures

AAMD Adaptive Behavior Scale (AAMD-ABS) Source: American Association on Mental Deficiency, 5201 Connecticut Ave., N.W., Washington, D.C. 20015

Behavioral Characteristics Progression (BCP) Source: VORT Corporation, P.O. Box 11132, Palo Alto, California

Estes Attitude Scales (EAS) Author: Thomas Estes, Ages: 7-12, Source: Slosson Educational Publications, P.O. Box 280, East Aurora, New York 14052

Weller-Strawser Scales of Adaptive Behavior (WSSAB) for L. D. Ages 6-18, Source: Slosson Educational Publications, P. O. Box 280, E. Aurora, NY 14052, Authors: Carol Weller & Sherri Strawser

Aptitude Measures

Differential Aptitude Test (DAT) Authors: Bennett, Seashore, & Wesman, Source: The Psychological Corporation, 757 Third Ave., NY, NY 10017, Grades: 8-12

General Aptitude Test Battery (GATB) Ages: 12-adult, Source: U.S. Training & Employment Service, Washington, D.C. 20012

Non-reading Aptitude Test Battery (NATB) Grades: 9-12, Source: U.S. Training & Employment Service, Washington, D.C. 20012

Career Maturity Inventory (CMI) Author: John O. Crites, Grades: 6-12, Source: CTB/McGraw-Hill, Del Monte Research Park, Monterey, Calif. 93940

Interest Measures

A & W Vocational Preference Index (VPI) Authors: J. Widmayer & J. Allard, Source: Slosson Educational Publications, P.O. Box 280, E. Aurora, NY 14052, Grades: 3 & up

Hall Occupational Orientation Inventory (HOOI) Author: L. G. Hall, Source: Follett Educational Corporation, Grades: 3-7 edition

Occupational Interest Inventory (OII) Authors: E. Lee & L. Thorpe, Source CTB/McGray-Hill, Del Monte Research Park, Monterey, California 93940, Grades: 9 & up

Picture Interest Inventory (PII) Author: K. P. Weingarten, Grades: 7 & up, Source: CTB/McGraw-Hill, DelMonte Research Park, Monterey, Calif. 93940

Reading-Free Vocational Interest Inventory (RVII) Author: R. Becker, Source: American Association on Mental Deficiency, Washington, D.C. 20015

School Psychologists in a Community College Vocational Assessment Center

*Ellan Dodson & Millie Turrentine-Jenkins**

While the purpose of this paper is to explain the role of the school psychologist at the New River Community College Title VII Assessment Center, it is most important to first describe the philosophy of the Assessment Center, as it operates at NRCC. By having such an understanding of its purpose, design, and procedural system, one gains better insight into how a school psychologist functions in such a setting.

Funded by a Private Sector Work Initiative Title VII grant, the New River Community College Assessment Center is equipped with a variety of testing materials and equipment which includes interest inventories, ability and aptitude tests, and individually developed and commercially purchased work samples. The selection of these materials was in a large part, determined after completion of an indepth study of vocational evaluation centers throughout the United States and an analysis of the job market in the New River Valley. These studies provided the basis for the "comprehensive" cornerstone philosophy of the New River Community College Assessment Center. That is, the emphasis of assessment entails a comprehensive concept and approach. The evaluation includes not merely an assessment of clients' achievement levels or interests, but encompasses measures to determine vocational skills, aptitudes, and abilities, and how these results might be integrated into educational and vocational planning. It is inherent in this philosophy that a comprehensive evaluation be individually tailored to meet the needs of the client.

As clients enter the New River Community College Assessment Center program, each is given an explanation of the program focus. After the client completes all necessary paperwork, audiological screening and vision testing (including color blindness) are performed. If problems are discovered during the screening, referral is made to area physicians. The client receives individual counseling regarding the range of services available at the center. A tentative program plan which considers the needs and desires of the individual client is then developed (Appendix A).

Program clients are scheduled for later appointments during a block period of time so that a major portion of the day can be devoted to a variety of evaluation tasks. The specific assessment instruments that are to be used with a client are determined by synthesis of information gathered during the initial client intake. Typically clients who are undecided about vocational goals go through work samples which are designed to determine vocational interests, capabilities, and potential. Results from the work samples are utilized, along with results from psychometric tests, to help the client toward setting career and vocational goals.

The role of the school psychologist in a Community College Assessment Center is similar to the role of the school psychologist in public schools. School psychologists, by virtue of their training in psychometric testing and counseling, are already well prepared to understand the importance and utility of such a comprehensive vocational evaluation. Few school psychologists, however, have had the opportunity to be trained in the work sample approach which we believe is necessary in order to offer a comprehensive assessment. Instruction in the administration and interpretation of work samples should be provided by a trained vocational evaluator. A trained evaluator can clarify how to assess skill level and incorporate worker behaviors so as to reduce subjectivity in ratings. With an understanding of how to integrate the results of the variety of testing instruments, the school psychologist can enjoy the satisfaction of providing a truly comprehensive client evaluation; an evaluation that provides a client with career goals and vocational plans.

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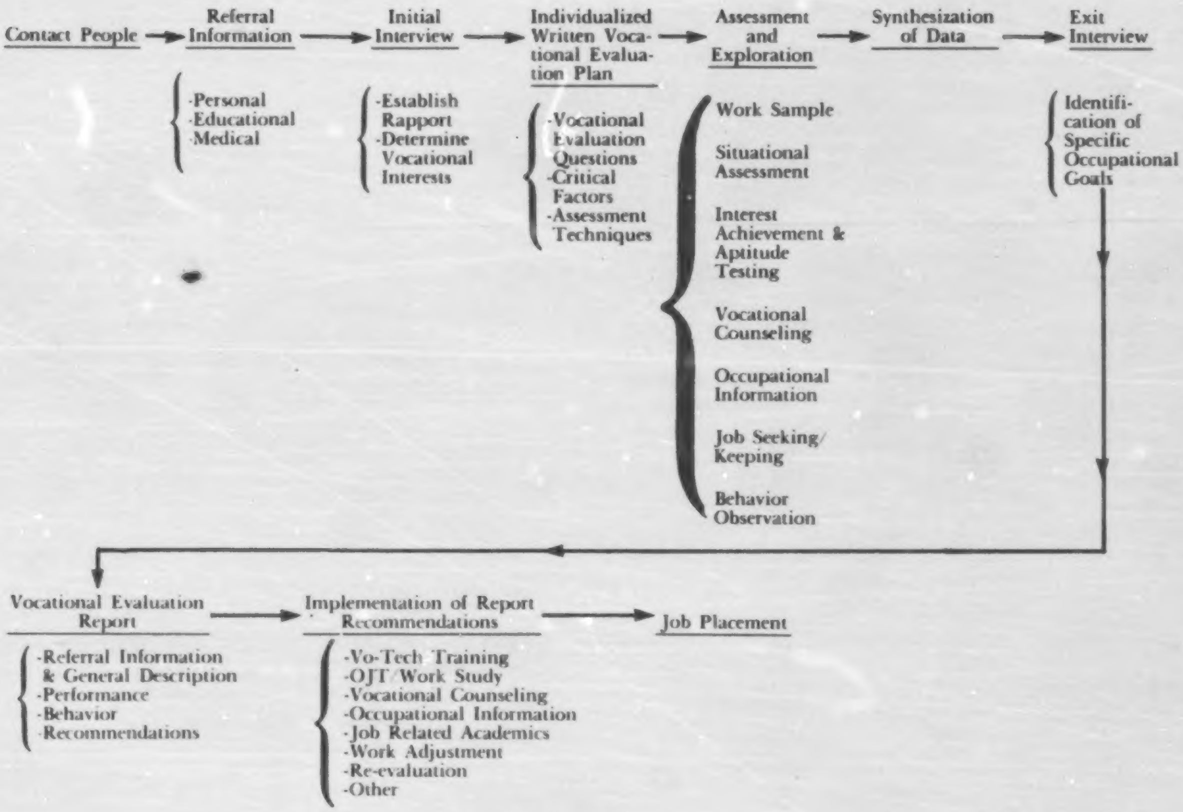
*Ellan Dodson & Millie Turrentine-Jenkins are former school psychologists who currently staff the vocational assessment center at New River Community College (Dublin, Virginia).

Appendix A


Contact People
Referral Information
-Personal
-Educational
-Medical
Initial Interview
-Establish Rapport
-Determine Vocational Interests
Individualized Written Vocational Evaluation Plan
-Vocational Evaluation Questions
-Critical Factors
-Assessment Techniques
Assessment and Exploration
Work Sample
Situational Assessment
Interest Achievement & Aptitude Testing
Vocational Counseling
Occupational Information
Job Seeking/Keeping
Behavior Observation
Synthesization of Data
Exit Interview
Identification of Specific Occupational Goals
Vocational Evaluation Report
-Referral Information & General Description
-Performance
-Behavior
-Recommendations
Implementation of Report Recommendations
-Vo-Tech Training
-OJT/Work Study
-Vocational Counseling
-Occupational Information
-Job Related Academics
-Work Adjustment
-Re-evaluation
-Other
Job Placement

U. S. Employment Service's Aptitude Testing Batteries and the Handicapped Student

Robert M. (Tommy) Barber*

The development of valid, reliable, as well as non-discriminatory, measures of human traits, abilities, and aptitudes has been a major concern of many. Not only to those who may be using tests as part of their clinical, educational, or employment practices, but also to those who may be (or have been) afflicted by inappropriate testing.

> In March, testing was an issue in a United States Supreme Court decision. The Court rules 8 to 0 [*Griggs v. Duke Power Co.,* 401 U.S. 424 (1971)] that under the Civil Rights Act of 1964 employers may not use test and other procedures that are 'neutral on their face. . . if they operate to freeze the status quo of prior discriminatory practices.
>
> The case in which the ruling was made involved an employer who instituted a policy after passage of the Civil Rights Act that persons wanting placement in any but its labor department must obtain satisfactory scores on an intelligence and a mechanical aptitude test given by the company. Neither test, the Court said, was intended to measure the ability to learn to do a particular job or category of jobs. Moreover, requisite scores were set so high that they would screen out about half of all the Nation's high school graduates.
>
> "Any test given by employers as a condition of employment of promotion must not operate as a 'built-in headwind' for minority groups and must also have a demonstrable relationship to job performance, the Court said." (Marshall, 1971, p. 8)

The measurement of an individual's capabilities for specific occupations and groups of occupations has long been the function of U.S. Training and Employment Service (USTES) testing. Furthermore, the USTES ***General Aptitude Test Battery*** (GATB) has been, since 1947, a valuable tool in the measurement of vocational aptitudes of job applicants and of candidates for occupational training. Basically, there are nine GATB aptitudes:

1. Intelligence—General Learning Ability (G)
2. Verbal Aptitude (V)
3. Numerical Aptitude (N)
4. Spatial Aptitude (S)
5. Form Perception (P)
6. Clerical Perception (Q)
7. Motor Coordination (K)
8. Finger Dexterity (F)
9. Manual Dexterity (M)

The above GATB aptitudes were identified by factor analytic studies of more than 50 tests that the employment service had been using over a period of years; and 12 tests were chosen to provide for an adequate measure of all nine vocational aptitudes. Two criteria were applied in choosing the tests: factorial validity and empirical validity against an external criterion. Sometimes the test with the highest factorial validity was disregarded in favor of a test that had acceptable factorial validity, but also had repeatedly demonstrated its practical validity against external criteria of success for a number of jobs

Since its publication in 1947, the GATB has been researched in a continuing program of development and occupational validation of Specific Aptitude Test Batteries—the measurement of two, three, or four GATB aptitudes which were significantly correlated to successful job performance in a specific occupation. GATB examinees having aptitude scores at or above various "cut-off" scores of an occupations's Aptitude Qualification Profile would be considered to possess a comparable level of specific vocational aptitudes typically found in successful workers in that occupation.

The GATB validation program has also identified Occupation Aptitude Patterns (O.A.P.s)—which are combinations of one to four aptitudes that were significantly correlated to successful job performances in a group (or cluster) of related occupations.

According to the aforementioned O.A.P. validation studies, if a GATB examinee scored at or above the minimum aptitude cutting scores of a given O.A.P., then he/she would have performed comparably to that of "successful" workers in a particular O.A.P. (group of related occupations) demanding a series of specific aptitudes development. Thus, after an examinee is administered the GATB, his/her aptitude scores are compared to the sixty-six O.A.P. groups of occupations in order to determine if there are one or more O.A.P.s for which he/she qualifies (Note Appendix B).

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However, many of the hard-core unemployed who need vocational counseling and remedial services to help them become employable have been unable to take the tests because they are illiterate and have difficulty understanding the directions. The exceptions are the five tests that measure Aptitudes, K, F, and M. Research has shown that these tests can be administered without revision to disadvantaged individuals (U.S. Department of Labor, 1964).

In its present form, the GATB is not appropriate for use with disadvantaged individuals. The reasons are as follows:

1. The GATB was standardized on employed workers most of whom were not disadvantaged, and most of the occupational validation studies were done on nondisadvantaged groups.
2. Four of the twelve GATB tests require [a 6th Grade readability level of] reading skills which many of the disadvantaged do not have.
3. There are problems associated with administration of the tests, including problems of understanding directions geared to nondisadvantaged individuals and problems in using a separate answer sheet, difficult for many disadvantaged individuals. In addition, disadvantaged individuals tend to be poorly motivated, uneasy about taking tests, and lacking in a speed set important for doing well in many of the tests.

These problems led to a decision to conduct research to develop a nonreading edition of the GATB for use with the disadvantaged. The GATB was used as the model in this development for two reasons:

1. The GATB measures the most important vocationally significant aptitudes. This has been demonstrated through factor analyses, correlations with other tests, and extensive occupational validation studies.
2. The GATB has been validated extensively against occupational criteria. The occupational norms developed in these studies provide a ready-made basis for interpreting scores on a nonreading edition of the GATB. (U.S. Dept. of Labor Manpower Admin., 1970)

In the development of the ***Nonreading Aptitude Test Battery*** (NATB), extensive efforts were undertaken in equating the NATB to comparable GATB aptitude levels via the Conversion Tables (Manual for the NATB, 1970, USTES). Once the NATB aptitude scores have been converted to comparable GATB aptitude scores, then one's aptitude scores may be compared to specific occupations' Aptitude Qualification Profiles or to the sixty-six O.A.P.s mentioned earlier in this text.

"At its present stage of development, the validity of the ***Nonreading Aptitude Test*** Battery can only be inferred. It has not been validated against hard criteria of job and training success with disadvantaged persons. It derives what validity it has on the basis of its relationship to the GATB, which has been validated extensively on external criteria," (Droege and Mugoas, 1976, p. 8). Today, little research has been undertaken to validate the NATB against external job performance or training success criteria.

The research program to develop the nonreading version of the GATB was an extremely extensive and time-consuming project; but, the NATB research was completed in 1969 and the instrument itself was installed in local "employment commission" offices throughout the nation over a two-year period thereafter.

In accompanying the NATB, the USTES introduced the ***Wide Range Scale*** (WRS) (Appendix B). This instrument was developed to help the counselor determine whether a disadvantaged person has sufficient literacy skills to take the GATB or whether he/she should be tested with the NATB. Basically, the WRS consisted of an 8-item Vocabulary Test and an 8-item Arithmetic Test. After taking these two tests, the examinee's scores were compared to minimal "cut off" scores (Vocabulary - 3 ***and*** Arithmetic - 6) which were determined to be indices of minimal literacy standards in being able to take the GATB. If the examinee did not score at or above the aforementioned "cut off" scores, then he/she would be given the NATB.

Reasons for Using U.S.E.S.'s Aptitude Test Batteries as a Vocational Assessment Component

A - U.S.E.S. has established norms and undertaken validity studies on Grade 9, Grade 10, and adult subjects' Aptitude Test Battery performances and the aptitudes' relationship to successful job performance in hundreds of occupations.

B - Via the use of U.S.E.S. - developed specific Occupation Aptitude Qualification Profiles as well as job title information from the Occupation Aptitude Profile listings (mentioned earlier in this text). Career exploration activities are simulated by knowing a student's GATB or NATB vocational aptitude profile. Students seem to be much more motivated to genuinely explore ***specific job titles*** for which they know they possess qualifying levels of various aptitudes.

C - U.S.E.S.'s Aptitude Test Battery has withstood the test of the courts as being a valid vocational aptitude test.

D - It is just a "paper-n-pencil" test of vocational aptitude; it is not intended to assess an individual's affective work skills as well. In vocational training facilities, such as public/private schools, technical centers, etc., an individuals's affective/social work skills can be better evaluated via other affective work skills checklists or continua. Proponents of Work Sample vocational assessment approaches feel that this is an advantage of their approach. I feel that it is only in vocational evaluation centers, etc.—where individuals are not involved (as yet) in a formal training program, that the vocational diagnostician needs to concern him-/herself with evaluating not only vocational aptitudes, interests, and physical capacities, but to assess the affective work behaviors of such clients. In public schools, technical centers, etc.—which should have a coordinated developmental program of not only vocational skills but generic work habits, skills, etc., the affective work demands would be better evaluated in an on-going data collection system of highly specific affective and social work skills, as cited above.

E - The U.S.E.S.'s Aptitude Test Battery can be given in a small group rather than invididual setting. By our experience in public schools, six or more LD students, approximately six borderline EMR students. three-to-four EMR students, or one-to-two moderately retarded students can efficiently be tested at one time in various settings.

F - Because of the popularity and extensive distribution of the ***Dictionary of Occupational Titles,*** we choose to use the NATB and GATB because it is known to employers, personnel workers, rehabilitation counselors, Employment Commission personnel, and vocational educators. Since literally thousands of jobs found in the ***Dictionary of Occupational Titles*** are described in part by the nine aptitudes measured by the U.S.E.S.'s Aptitude Test Battery, I feel that this is the most familiar language of job aptitude demands with which to relate with the vast variety of vocational personnel workers.

G - The nine aptitude dimensions can be readily incorporated into any vocational training/generic development curricula with only a moderate degree of imagination by vocational educators and program coordinators.

APPENDIX A
Aptitudes Measured by the GATB

The nine aptitudes measured by the GATB are listed below. The letter used as the symbol to identify each aptitude and the part or parts of the GATB measuring each aptitude are also shown.

Aptitude	Tests
G—Intelligence	Part 3—Three-Dimensional Space Part4—Vocabulary Part 6—Arithmetic Reason
V—Verbal Aptitude	Part 4—Vocabulary
N—Numerical Aptitude	Part 2—Computation Part 6—Arithmetic Reason
S—Spatial Aptitude	Part 3—Three-Dimensional Space
P—Form Perception	Part 5—Tool Matching Part 7—Form Matching
Q—Clerical Perception	Part 1—Name Comparison
K—Motor Coordination	Part 8—Mark Making
F—Finger Dexterity	Part 11—Assemble Part 12—Disassemble
M—Manual Dexterity	Part 9—Place Part 10—Turn

The following are the definitions of the nine aptitudes measured by the GATB:

G—Intelligence.—General learning ability. The ability to "catch on" or understand instructions and underlying principles; the ability to reason and make judgments. Closely related to doing well in school. Measured by Parts 3, 4, and 6.

V—Verbal Aptitude.—The ability to understand meaning of words and to use them effectively. The ability to comprehend language, to understand relationships between words and to understand meanings of whole sentences and paragraphs. Measured by Part 4.

N—Numerical Aptitude.—Ability to perform arithmetic operations quickly and accurately. Measured by Parts 2 and 6.

S—Spatial Aptitude.—Ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space. Measured by Part 3.

P—Form Perception.—Ability to perceive pertinent detail in objects or in pictorial or graphic material Ability to make visual comparisons and discriminations and see slight differences in shapes and shadings of figures and widths and lengths of lines. Measured by Parts 5 and 7.

Q—Clerical Perception.—Ability to perceive pertinent detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation. A measure of speed of perception which is required in many industrial jobs even when the job does not have verbal or numerical content. Measured by Part 1.

K—Motor Coordination.—Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement repsonse accurately and swiftly. Measured by Part 8.

F—Finger Dexterity.—Ability to move the fingers, and manipulate small objects with the fingers, rapidly or accurately. Measured by Parts 11 and 12.

M—Manual Dexterity.—Ability to move the hands easily and skillfully. Ability to work with the hands in placing and turning motions. Measured by Parts 9 and 10.

Table 1

OCCUPATIONAL APTITUDE PATTERNS (OAPs) AND THEIR NONSUPERVISORY OCCUPATIONAL COVERAGE IN WORK GROUPS OF THE *GUIDE FOR OCCUPATIONAL EXPLORATION*

LIMITS OF DOT OCCUPATIONS COVERAGE

		GUIDE FOR OCCUPATIONAL EXPLORATION WORK GROUP		APPLICABLE DATA CODES*	Occupations in Work Group		
OAP	ADULT GATB NORMS	CODE	TITLE		TOTAL	OAP APPLIES	%
1	G100 V100 Q100	01.01	Literary Arts	0	18	16	89
2	G100 S100 P85	01.02	Visual Arts	all	45	45	100
3	G100 V100	01.03	Performing Arts: Drama	0-2	25	23	92
4	G110 V100 Q100	01.04	Performing Arts: Music	0	13	13	100
5	G100 S95	01.05	Performing Arts: Dance	all	4	4	100
6	S90 P85 M85	01.06	Craft Arts	2-6	169	163	96
7	G115						
7	G115 V105 N110 S110	02.01	Physical Sciences	all	28	28	100
8	G115 V105 N110 S110	0.202	Life Sciences	all	50	50	100
9	G115 V105 N110 S110	02.03	Medical Sciences	0-1	47	44	90
10	G105 N100	02.04	Laboratory Technology	2-3	82	66	80
11	G100 N90	03.01	Managerial Work: Plants and Animals	1-3	50	49	98
12	G95 M85	03.03	Animal Training and Service	2	154	5	36
13	K85 M85	03.03	Animal Training and Service	3-6	14	9	64
14	K85	03.04					
12	G95 M85	03.03	Animal Training and Service	2	14	5	36
13	K85 M85	03.03	Animal Training and Service	3-6	14	9	64
14	K85 M80	03.04	Elemental Work: Plants and Animals	all	154	154	100
15	G100 Q95	04.01	Safety and Law Enforcement	all	45	44	98
16	G95	04.02	Security Services	1-3	55	25	45
17	G115 N105 S110	05.01	Engineering	0-1	161	152	94
18	G105 V100 N100 S95	05.02	Managerial Work: Mechanical	all	67	67	100
19	G105 N100 S100	05.03	Engineering Technology	1-2	139	111	80
20	G105 N100 S100	05.04	Air and Water Vehicle Operation	1-2	24	21	88
21	S90 P85 M85	05.05	Craft Technology	2-6	590	582	99
22	N90 S90 P85	05.07	Quality Control	1-2	68	26	38
23	S85 P80	05.08	Land and Motor Vehicle Operation	all	38	38	100
24	G95 N85 Q90	05.09	Materials Control	1-4	147	87	59
25	Q85 K85	05.09	Materials Control	5	147	34	23
26	S85 P80 M85	05.10	Crafts	1-4	383	246	64
27	P80 K85 M85	05.10	Crafts	5-6	383	137	36
28	S85 P80 M85	05.11	Equipment Operation	all	128	128	100
29	K85 M80	05.12	Elemental Work: Mechanical	all	417	417	100
30	N85 S90 P85	06.01	Production Technology	1-2	368	92	25
31	S85 P85 M85	06.01	Production Technology	3-6	368	276	75
32	P80 K85 M85	06.02	Production Work	all	1,565	1,565	100
33	P80 K85 M85	06.03	Quality Control	all	552	552	100
34	K85 F80 M80	06.04	Elemental Work: Industrial	all	3,894	3,894	100
35	G100 N95 Q100	07.01	Administrative Detail	all	60	60	100
36	G95 N90 Q100	07.02	Mathematical Detail	all	99	99	100
37	G95 N90 Q100	07.03	Financial Detail	all	25	25	100
38	G95 Q95	07.04	Oral Communications	all	99	99	100
39	G95 Q95	07.05	Records Processing	all	146	146	100
40	G95 Q100 K95	07.06	Clerical Machine Operation	all	38	38	100
41	Q90 K85	07.07	Clerical Handling	all	35	35	100
42	G100 V100 N95 Q100	08.01	Sales Technology	all	60	60	100
43	G95 N90 Q90	08.02	General Sales	all	141	141	100
44	K85 M80	08.03	Vending	all	7	7	100
45	G95	09.01	Hospitality Services	all	32	32	100
46	S85 P85 K90 M85	09.02	Barber and Beauty Services	all	6	6	100
47	S85 M85	09.03	Passenger Services	all	9	9	100
48	K85 M80	09.05	Attendant Services	4-6	64	56	88
49	G105 V100 N100 Q95	10.01	social Services	all	29	29	100

50	G105 V100	10.02	Nursing, Therapy, and Specialized Teaching Services	all	48	48	100
51	G95	10.03	Child and Adult Care	all	32	32	100
52	G115 V100 N110 S100	11.01	Mathematics and Statistics	0.1	21	19	90
53	G100 V100 N95 Q100	11.02	Educational and Library Services	1-2	48	36	75
54	G95 Q95	11.02	Educational and Library Services	3	48	12	25
55	G110 V100 N105	11.03	Social Research	0-1	33	26	79
56	G100 V100 N95 Q100	11.03	Social Research	2-3	33	7	21
57	G110 V100 N105	11.04	Law	1	27	21	78
58	G100 V100 N95 Q100	11.04	Law	2	27	6	22
59	G105 V95 N100 Q100	11.05	Business administration	all	115	115	100;
60	G110 V95 N105 Q100	11.06	Finance	0-1	52	37	71
61	G105 V95 N100 Q100	11.07	Services Administration	all	66	66	100
62	G100 V100 N95 Q100	11.08	communications	all	19	19	100
63	G105 V95 N100 Q100	11.09	Promotion	all	20	20	100
64	G105 N95 Q95	11.10	Regulations Enforcement	1-2	48	45	94
65	G100 V95 N95 Q100	11.11	Business Management	all	72	72	100
66	G100 V95 N95 Q100	11.12	contracts and Claims	all	34	34	100

***This refers to the 4th digit of the 9-digit DOT code shown for each occupation in the *Guide for Occupational Exploration* Work Group listing of occupations. The OAP applies to all of the nonsupervisory occupations with the 4th digit DOT codes indicated.**

Appendix B
THE OAP STRUCTURE AND ITS USE IN COUNSELING

This section of the Manual for the GATB contains GATB aptitude norms for use in counseling. The norms are applicable for use with all forms of the GATB, and separate levels of cutting scores have been established for adults, ninth graders, and tenth graders.

The aptitude norms are referred to as Occupational Aptitude Patterns (OAPs). Each OAP consists of the most important aptitudes, with associated critical scores, for a group of occupations which have similar aptitude requirements. The 1979 revision of the OAP structure contains 66 OAPs covering 97% of the nonsupervisory occupations listed in the **Guide for Occupational Exploration** (U.S. Department of Labor 1979).

Applicability

The OAPs are closely related to the Work Groups of the **Guide for Occupational Exploration.** Table 1 lists the OAPs, the Work Group to which each applies, and the limits of specific occupational coverage for each OAP.

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U.S. Department of Labor Manual for the USTES Nonreading Test Battery. Section 2: Development Washington: Government Printing Office, 1970.

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Vocational Interest Assessment Procedures

*Wm. Tucker Anderson**

Interest assessment is a major component of comprehensive vocational evaluations (Patten, 1981; Phelps & Wentling, 1977; Rosenberg, 1982). Given the orientation of secondary schools toward vocational preparation, interests play a key role in course selection and vocational training. In effect, interests help determine options available to students in high school settings.

Since interest assessment is not generally undertaken during school psychologists' psychoeducational evaluations in the elementary school, many practitioners are unfamiliar with the nature and types of methodologies available. Often, the only instruments many have seen were given during their own high school years. The purpose of this paper is to explore the uses and methods of interest assessment.

It is important to recognize that interests may change over time, particularly during the middle and high school years. During this period, students are in the process of becoming more aware of their own skills and preferences, and are exposed to a wider range of occupations. Consequently, preferences change as knowledge increases to include more options and better self awareness.

Vocational interests are part of a constellation of interdependent factors which influence individuals' career decisions. They are closely related to aptitudes, but are poor predictors of skill attainment (Cottle, 1968). Most authors acknowledge that interests serve as motivators of student learning (Anastasi, 1976; Zytowski, 1973). Conceptually, achievement levels reflect interactions between abilities or aptitudes, and interests. For example, poor achievement may be attributed to either low ability or a lack of interest. Interest assessment then, is a major source of information on the motivational aspects of vocational behavior.

Informed career decision making is based on a number of individual characteristics including cognitive, perceptual, motor, social, achievement, interest, and aptitude factors. Each factor contributes important information to the decision process. According to Clemens (1980), interest assessment serves three purposes in decision making. First, results help clarify areas which decision makers (either students or placement committees) might overlook or not clearly identify. Secondly, results help organize occupations into clusters having similar interest patterns. Finally, interest assessment provides a means of prioritizing interest areas.

Interests influence students' motivation to participate in vocational programs and their commitment. Placement of students in programs in which they have little interest results in negative outcomes for the student and school system. Therefore, a careful examination of interests and vocational program options must precede placement.

Vocational interests are closely related to needs (Osipow, 1973). There is evidence suggesting that needs and interests may be indistinguishable from each other. It is reasonable to assume that needs generate interests in particular aspects of jobs. Indeed, Pietrofesa and Splete (1975) hypothesized that people choose specific jobs because they think that their needs will be satisfied. Because of this relationship, vocational interests are a key factor in job satisfaction and future vocational adjustment.

Assessment

Prior to an examination of interest assessment techniques, the evaluator must have a clear idea of how results will be used and the student's level of occupational sophistication. For example, handicapped students who have not participated in vocational awareness programs may not present clearly defined vocational interests, reflected in flat interest profiles. Assessment results must be directed toward evaluation goals. Vocational interest assessment prior to pre-vocational programs is different in intent from assessments for vocational program placements: The former should be broad and generate several alternatives for exploration, while the latter is more narrow and geared to vocational program offerings.

Assessment of vocational interests is typically approached by examining individual likes and dislikes for various activities which are keyed to different occupations, school subjects, and hobbies (Anastasi, 1976). Four basic approaches to interest assessment are evident in the literature. These are expressed interests, manifest interests, tested interests, and inventoried interests (Vaughan, 1970). Expressed interests are derived by simply asking for likes or dislikes and may reflect individual expectations, preferences, or fantasies. Manifest interests evolve from the observation of activities that people engage in, especially during their leisure time. The implicit assumption of manifest interest assessment is that people spend time doing what interests them. Tested interests involve the knowledge of specific fields. This approach is occupationally specific and assumes that people accumulate knowledge of fields they are interested in. Interest inventories typically present lists of activities from which likes and dislikes are chosen.

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These approaches to interest assessment yield similiar, but not always identical, results with handicapped students. These students may not have an accurate perception of actual job activities specific to various occupations. Handicapped students also typically possess knowledge of only a few jobs.

Expressed Interests

During the evaluation process, students can be interviewed in order to ascertain expressed interests. Likewise, interviews with parents and teachers of handicapped students can provide information of expressed likes and dislikes. While interviews with students are the easiest interest assessment method, results may be unreliable because many handicapped students have a limited exposure to varied occupations and stereotyping may influence perceptions of job activities (Anastasi, 1976).

Manifest Interests

Manifest interests are particularly amenable to assessment during work sampling procedures (Brolin, 1976). Since work samples simulate actual job activities, evaluators are able to observe what types of activities seem to interest students most. Interviews with students and their teachers and parents provide information on activities students engage in voluntarily. This is an important area to cover given that handicapped students may not be aware of how leisure pursuits are related to vocational interests.

Tested Interests

Assessments of specialized occupational interests are not as applicable to secondary settings as other techniques given the emphasis on training and a lack of occupational exposure characteristic of this age group. Nevertheless, specialized interests can be assessed as a follow-up to prevocational or vocational awareness programs to determine interests through differential retention rates. Given other, less time consuming methods and retention problems inherent in some handicaps, however, tested interests are less useful.

Inventoried Interests

Interest inventories are the most common assessment technique. There is a great deal of interest and controversy in the literature, however, over the use of these inventories with handicapped students, particularly the retarded. Some authors argue that interest inventories are useful only for those persons who have access to a wide variety of occupations (Zytowski, 1973). The argument rests on the fact that retarded students are often trained for semi-skilled or unskilled jobs and, therefore, interest assessments are of little value. The influence of interests on students' commitment to training, however, makes interest assessment imperative for all students.

Like other components of vocational evaluations, there is no one interest inventory which is suitable for all students (Clemens, 1980). The dilemma is particularly evident for handicapped students. Many popular inventories may be modified slightly for administration to some groups, however, this violates standardization procedures (Alcorn & Nicholson, 1975). Most interest inventories rely on paper and pencil methodologies which place some groups at a disadvantage. In fact, it seems that the greater a student's need for vocational services is, the less useful paper and pencil tests are (Backer, 1979).

Many commonly used interest inventories are inappropriate for handicapped students because of high reading requirements (Alcorn & Nicholson, 1975; Backer, 1979; Parnicky & Presnall, 1976; Patten, 1981) verbal comprehension requirements (Alcorn & Nicholson, 1975), and inappropriate content (Brolin, 1976; Clemens, 1980; Hutt & Gibby, 1965; Niziol & DeBlassie, 1972; Parnicky, Kahn, & Burdett, 1965). These criticisms are applicable to many popular inventories of vocational interests when administered to retarded populations who exhibit low reading and comprehension levels, short attention spans, and difficulty following directions (Alcorn & Nicholson, 1975). These limitations also apply to other handicapped populations who exhibit similar specific test taking deficits. Characteristics of some of the more common inventories which rely on language skills are presented in Appendix A.

Over the years, several pictoral interest inventories have been developed in an effort to avert some of the problems associated with paper and pencil tests. For example, the ***Vocational Apperception Test*** by Ammons, Butler, and Herzig (1949) and the ***Geist Picture Interest Inventory*** by Geist (1964) were developed for low literate or illiterate clients. Both, however, are of questionable value with some handicapped populations because both cover mainly skilled and technical occupations (Niziol & DeBlassie, 1972).

More recent reading-free interest inventories include the ***Vocational Interest and Sophistication Assessment*** (VISA) by Parnicky,J. J., Kahn, H., & Burdett (1968), the ***AAMD-Becker Reading-Free Vocational Interest Inventory*** (RFVII) by Becker (1975), and the ***Wide-Range Interest and Opinion Test*** (WRIOT) by Jastak and Jastak (1972). Comparisons of these instruments are presented in Appendix B and C.

Considerations

No one type of vocational interest assessment is adequate for decision making. Like other components of psychological evaluations, interest assessment must be a multi-faceted process. Evaluators should examine manifest, expressed, and inventoried interests in order to maximize accuracy in decision making. Examiners should look for commonalities between the methods and attempt to prioritize interest areas. While interviewing is frequently recommended as the best approach to interest assessment of handicapped students (Brolin, 1976; Patten, 1981), other methods should be used to identify common interest themes.

Several factors should be considered when selecting interest inventories to be used with special populations. It is important to match student skills with tests which have appropriate age ranges (Clemens, 1980), reading requirements (Clemens, 1980, Parnicky, Kahn, & Burdett, 1965; Parnicky & Presnall, 1976; Zytowski, 1973), and content in terms of occupational levels covered (Parnicky & Presnall, 1976; Niziol & DeBlassie, 1972; Zytowski, 1973). In addition, evaluators should consider an instrument's norm groups (Zytowski, 1973) and whether the inventory provides information on specific occupations or occupational clusters (Anastasi, 1976).

Summary

Vocational interest assessment with handicapped populations is a salient component of vocational evaluations and career decision making. Like other components, interest assessment must be multi-faceted and involve students, teachers, and parents. While no one technique or instrument can provide accurate vocational interest information for all students, guidelines and alternatives are available to aid in the selection of approaches. These may range from minor administrative changes (e.g., oral administration) to specific techniques developed for particular populations. The major point is that vocational interest assessment must be tailored to individual student characteristics.

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Appendix A
COMMON INTEREST INVENTORIES
(Paper and Pencil)

Kuder General Interest Survey, Grades 6-12
Norm Group: Public School
Reading Level: 6th Grade
Comment: The Kuder is a well documented instrument which is keyed to interest clusters. Even with oral administration, however, comprehension may be difficult for some.
Sources: Alcorn & Nicholson, 1975; Kirk, 1975; Kuder, 1972

Strong-Campbell Interest Inventory, Ages 16 and over
Norm Group: Mostly College
Reading Level: 6th Grade
Comment: Like the Kuder, the Strong Campbell is well researched. The test is keyed to clusters and specific occupations. most of which are professional or semi-professional.
Sources: Botterbusch, 1978; Strong & Campbell, 1977

Ohio Vocational Interest Survey, Grades 8-12
Norm Group: High School Students
Reading Level: 8th Grade
Comments: The OVIS is useful for both school and vocational planning. It is keyed to subjects and occupational clusters. Has been found to be statistically valid with the EMR population but too abstract.
Sources: Botterbusch, 1978; D'Coste, Winefordner, Odgers & Koones, 1972; Drugo & Cohen, 1977; Zytowski, 1973.

Appendix B
READING-FREE INTEREST INVENTORIES

AAMD-Becker Reading Free Vocational Interest Inventory

Target Group: EMR High School Students

Norm Groups: EMR Students, Grades 9-12

Format Response: Circle one of three pictures in each set of 55 (Male) or 40 (female) items.

Comments: The RFVII is keyed to a small range of semi-skilled occupations (11 for males and 8 for females). Directions are given orally. The norm population consisted of 3407 males and 3006 females. Drugo and Cohen (1977) found that counselors judged the RVII as an accurate reflection of expressed interests.

Sources: Becker, 1975, Botterbusch, 1978; Diamond, 1978; Domino, 1978; Drugo & Cohen, 1977

Vocational Interest and Sophistication Assessment

Target Group: Retarded Adolescents and Young Adults

Norm Groups: N/A

Format/Response: N/A

Comments: The VISA includes interest and sophistication (e.g., knowledge of occupations) items. The instrument is geared toward semi-skilled jobs in 7 occupational areas for males and 4 areas for females.

Sources: Brolin, 1976; Niziol & DeBlassie, 1972; Parnicky & Presnall, 1976.

Wide-Range Interest and Opinion Test

Target Group: Grades 8-12 and Adults

Norm Groups: Grades 8-12 and Adult Age Ranges by Sex

Format/Response: Choose like and dislike from 150 triads; separate answer sheet

Comments: The WRIOT covers a wide range of occupations some of which are beyond the reach and experience of some handicapped groups. Reports both interest and attitude scores. The manual contains some instructions for using the WRIOT with special groups.

Sources: Botterbush, 1978; Jastak and Jastak, 1972; Zytowski, 1978.

Appendix C
OCCUPATIONAL COVERAGE OF READING FREE INSTRUMENTS

VISA	RFVII	WRIOT
Garage	Automotive	*Interests*
Laundry	Laundry	Art
Food Services	Food Service	Literature
Materials Handling	Materials Handling	Music
		Drama
Maintenance		Sales
Farm/Grounds	Horticulture	Management
Industry		Office Work
	Animal Care	Personal Service
	Patient Care	Protective Service
	Janitorial	Social Service
	Personal Services	Social Science
	Building Trades	Biological Sciences
	Clerical	Physical Science
		Number
		Mechanics
		Machine Operation
		Outdoor
		Athletics
		Attitudes
		Sedentariness
		Risk
		Ambition
		Ambition
		Chosen Skill Level
		Activily by Sex
		Agreement
		Interest Spread

The Measurement of Adaptive Behavior In Public Secondary Schools: The School Psychologist's Role

*C. Frederick Capps**

Public Law 94-142 has mandated the use of nondiscriminatory assessment techniques when special education placement is being considered. Judicial decisions involving the Larry P. v. Riles (1971) and Diana v. State Board of Education (1970) cases reflect this mandate. In both cases the use of individual intelligence tests as the sole criteria for special class placement was ruled illegal. It was decided that disproportionate numbers of minority children were placed in classes for the educable mentally retarded without regard to their culturally relevant environment.

In response to the need for nondiscriminatory assessment procedures, school psychologists have explored the use of adaptive behavior measurement scales as a possible alternative. Most of the research and instrumentation available on adaptive behavior measurement have centered on elementary school age children. Little attention has been focused on the measurement of adolescent adaptive behavior (Coulter & Morror, 1978a). Some empirical support has been reported for the developmental process implied in common definitions of adaptive behavior (Mercer, 1973; Nihira, 1976). Most cited among these definitions is the one adopted by the American Association of Mental Deficiency which states that adaptive behavior is: "The effectiveness or degree in which the individual meets the standards of personal independence and social responsibility expected of his age" (Grossman, 1973, p. 11). The purpose of this paper is to review adaptive behavior scales that received substantial attention in the school psychology literature. The limitations of these instruments with secondary school students will be stressed. Also, an argument for the use of adaptive behavior measurement with secondary school handicapped students will be presented along with some methods of gathering such information.

Adaptive Behavior Instrumentation

Coulter (1980) reported two surveys to determine what adaptive behavior instruments were being used in the public schools. The results of both surveys ranked the AAMD Adaptive Behavior Scale-Public School Version (ABS-PS) and the Vineland Social Maturity Scales (VSMS) as the two instruments most commonly used for special education placement decisions. Since the results of these surveys were first reported, the Adaptive Behavior Inventory for Children (ABIC) has been used frequently in some localities (Boyd, Slay, & Shiver, 1981; Morrow & Coulter, 1978). In addition to these scales, a new instrument which is likely to gain more attention in regard to the nondiscriminatory assessment issue is the Children's Adaptive Behavior Scale (Richmond & Horn, 1980). Despite the attention these instruments have received, their utility with secondary school age students appears to be minimal.

Lambert (1979) reported that the ABS-PS was developed in response to the assessment needs created by federal mandates. This scale was developed using the same format as the original AAMD Adaptive Behavior Scale. The major difference between the two scales is that the public school version was normed on public school handicapped students rather than institutionalized subjects. Also, there is a difference in the age norms of the two scales. The institutional sample ranges in age from 3 to 69 years, whereas the public school version is normed with children aged 7 years 3 months to 13 years 2 months. Close examination of these norms indicate that the use of the ABS-PS in placing students in special education classes is questionable because the sample was not normally distributed. Consequently, accurate predictions of an individual's level of adaptive functioning are limited (Coulter, 1980). Also, the upper limit of the ABS-PS norms only address adaptive behaviors for early adolescents. Thus, its utility with secondary school age students appears limited.

The Vineland Social Maturity Scale (VSMS) was developed for use with individuals from birth to 30 years of age. Although this age range appears appropriate for use with adolescents, its norms are generally considered to be dated and there is no measure of maladaptive behavior in the scale (Taylor, Warren, & Slocumb, 1979).

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Both the ABIC and the Children's Adaptive Behavior Scale were developed in response to the nondiscriminatory assessment issue. The ABIC is part of the System of Multicultural Pluralistic Assessment (SOMPA). The standardization sample included: 700 Hispanics, 700 Blacks, and 700 Anglo children from children ranging in age for 5 years to 11 years and 11 months (Baca & Cervantes, 1978). The Children's Adaptive Behavior Scale is a new self reporting instrument developed for children aged 5 thorugh 10 years. Despite the potential this scale has demonstrated (Richmond & Horn, 1980), it like the ABIC, is normed on inappropriate samples to address adolescent needs. It appears that the emphasis on the placement dimension of adaptive behavior by public schools has encouraged the development of scales which address the age ranges of children who are typically evaluated for initial special education placement.

The few adaptive behavior instruments that address adolescents were developed by individuals in the field of mental retardation. These scales tend to focus on the needs of institutionalized clients (Coulter & Morrow, 1978b). Some of the better known instruments include:

AAMD Adaptive Behavior Scale
Balthazar Scales of Adaptive Behavior
Cain-Levine Social Competency Scale
T.M.R. Performance Profile for the Severely and Moderately Retarded
The TARC Assessment System
Camelot Behavior Checklist

A common feature of the above scales is that they were developed to address programmatic needs of the institutionalized retarded in the areas of self help, communication skills, motor development, and socialization. The idea is to assess the client's level of functioning in each of these domains and then develop a program that will facilitate the individual in progressing through each of these behavioral domains. Improvement in each of these areas will help the retarded individual toward maximum independent functioning.

In summary, it appears that adaptive behavior scales have emerged through the needs of two separate camps. The public school camp has been involved in designing instruments that can help in identifying the levels in which one might be deficient in adaptive functioning. Consequently, if one is below a minimum criteria level then special class placement may be recommended. Since initial placement in special education is the main concern of the public school camp, instrumentation development has centered on elementary age pupils. On the other hand, the mental retardation camp has concentrated on developing scales that will help in programming for the deinstitutionalization of handicapped individuals. Although these scales have addressed adolescents, their usefulness with milder handicapped pupils in the public schools appears limited.

Adaptive Behavior Measurement in Secondary Schools

Coulter and Morrow (1978a) have expressed concern about the limited amount of information concerning adolescent adaptive behavior. This issue needs to be addressed so public schools can better prepare handicapped secondary school students for their post school environments. The difficulty handicapped individuals experience in adapting to post school environments is well documented (Brolin and Gysbers, 1979). Much of this problem involves poor vocational and social development (Capps, Houff, & Belvins, 1982; Karayanni, 1981; Lombana, 1980; Sinick, 1979).

Career and vocational education are logical approaches to helping handicapped secondary students develop skills that will help them adapt to post school environments. Until recently, these students had little, if any, opportunity to participate in such programs. The passage of Public Law 94-142, along with Public Law 94-482 (Vocational Education Act of 1976) and section 504 of Public Law 93-112 (the Rehabilitation Act of 1973) has put pressure on public schools to provide services for the handicapped. This legislation has begun to have an impact on our public schools. Increased numbers of handicapped individuals have been identified and educated in the public school setting since the passage of Public Law 94-142. Many of these individuals are now in, or are preparing to leave secondary education (Hohenshil, Shepard, & Capps, 1982). To better serve these students, it is vital that the vocational and social development issues stated earlier are addressed. That is, to facilitate handicapped students in reaching the standards of personal independence and social responsibility expected for post school adjustment, school psychologists need to stress the measurement of adaptive behavior skills beyond the nondiscriminatory assessment issue. To accomplish this, school psychologists can borrow from the techniques of the two camps mentioned earlier in developing appropriate adaptive behavior instruments.

Placement: The issue of placement is important in deciding on an appropriate vocational program for the handicapped. Work sample systems are used in many rehabilitation and workshop settings to examine aptitude and interest levels, but their use in public education has been limited. Also, the ability of a work sample system to predict success in a vocational setting alone has been questioned (Stodden, Casale, & Schwartz, 1977). Such factors as adaptive-maladaptive language functioning (Malgady, Barcher, Towner, & Davis, 1979), personality variables, and attitudinal variables (Mullins & Hays, 1980) can be major influences in a handicapped individual's success at a work setting. Thus, a variety of dimensions must be addressed when considering vocational placement (e.g. sheltered workshop, prevocational training program, regular vocational training center, on-the-job training, etc.).

The Vocational Adaptation Rating Scale (Malgady, Barcher, Davis, & Towner, 1980) is a recently developed adaptive behavior scale which addresses the predictability of an individual's success in a vocational setting. It was developed to measure the frequency and severity of maladaptive behavior likely to occur in a vocational setting that might jeopardize the employment status of severly, moderately, and mildly mentally retarded workers. Individuals are rated on their level of maladaptive functioning in the following domains: Verbal manners, communication skills, attendance and punctuality, interpersonal behavior, respect for property, rules and regulations, and grooming and personal communication. Limited validity studies conducted by its authors appear promising. Other techniques proposed by Guidubaldi, Kehle, and Murray (1979) involve systematic observations, parental and teacher interviews, and sociometric assessment techniques. These techniques are especially useful in relating behavior to specific settings in which the student is or may be placed.

Programming: Once a handicapped student is placed in a vocational setting, individualized programming must be addressed. The results from the above techniques could be used for this purpose. For example, the student's IEP could address verbal manners as a long term behavioral goal. Adaptive behavior, however, involves more than work related behavior. An instrument which addresses the knowledge of an individual on domains related to adaptive functioning in the community and society is the Social and Prevocational Information Battery (Halpern, Raffeld, Irvin, & Link, 1975). This instrument was developed in response to the need for community adaptation of public school educable mentally retarded students (Halpern, Irvin, & Landman, 1979; Irvin, Halpern, & Reynolds, 1977). The battery has a true-false format that includes 9 tests which cover the areas of employability, economic self-sufficiency, family living, personal habits, and communication skills. The results of these tests can be used easily by cooperative and special education teachers in developing behavioral objectives. Technical data on this instrument suggests predictive validity coefficients of r = .75 to .81 (Browning & Irvin, 1981). Apparently, the instrumentation is developing which addresses the adaptive behavioral needs of at least a segment of handicapped secondary students.

Discussion

The measurement of adolescent adaptive behavior can be a time consuming task. Direct observation over extended periods of time and multiple test sessions are the rule with this type of measurement. It is impractical to think that school psychologists have the time to directly evaluate these adaptive domains. Other individuals such as teachers, training instructors, counselors, and work supervisors maintain constant contact with handicapped secondary students. Utilization of these individuals in data gathering would be helpful. Therefore, the development of instruments that can be used easily by untrained individuals, but provide reliable and valid information to the school psychologist and the child study team are needed. It appears that appropriate research in developing these instruments has begun. It is up to school psychologists to keep up with this development to insure that information is gathered that can help handicapped students achieve their optimal level of independent functioning.

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Occupational Social Competence/ Skills: A Necessary Component Of Vocational Assessment For School Psychologists

J. Keith Houff[*]

Various forces are presently shaping a shift of emphasis and a need to expand psychological services to the secondary and post secondary student. As disadvantaged and handicapped individuals enter our secondary schools, educators are obliged to accommodate academic and vocational curricula and programs to meet the special needs of these groups. A combination of federal legislation (i.e., the Education For All Handicapped Children Act, Sections 503 and 504 of the Rehabilitation Act) and our society's current social and economic awareness are forcing education to shift from solely an academic preparation of youth to include preparation for an occupation (Razeghi & Davis, 1979). To accomplish such an ambitious goal, vocational educators realize that successful programs in vocational rehabilitation for handicapped students require a comprehensive vocational assessment closely tied to remedial efforts (Growick, 1981; Hohenshil & Warden, 1978; Nadolsky, 1981; Peterson, 1981; Sitlington, 1981).

If school psychologists are going to adapt their assessment expertise to compliment a comprehensive vocational evaluation for handicapped secondary students, a traditional diagnostic model is insufficient. Numerous authors have emphasized that the handicapped require psychological evaluations that generate remedial strategies in addition to addressing placement decisions (Fagan, 1981; Guidubaldi, Kehle, & Murray, 1979; Halpern, 1979; Neff, 1970). Furthermore, the concerns of the handicapped adolescent extend beyond the development of academic and vocational skills (Brolin & Kokaska, 1979; Gearheart, 1980; Goldberg, 1981; Kneedler, 1980). Social competence, work adjustment, work related adaptive behaviors, and mainstreaming concerns are overlapping and descriptive constructs that should be addressed in a comprehensive vocational evaluation. Unfortunately, commercial work sample evaluations are neither sophisticated enough nor designed to provide such information: They are designed to assess areas of vocational interests, vocational achievement, and vocational aptitude. Standardized psychological batteries incorporating intelligence, achievement, personality, and psychomotor tests fall disappointingly short of predicting occupational success or facilitating remedial vocational efforts, even if vocationally oriented interest/aptitude tests are incorporated (Nadolsky, 1981; Neff, 1970; Phelps & Wentling, 1977).

The intent of this paper is to develop a rationale for including social competence as a legitimate domain in the vocational evaluation of special needs students. Evaluation procedures developed under the domain of behavioral assessment and social learning theory are considered most appropriate to the assessment of social competence.

A Case For Social Education

Broadly speaking, social competence is an important factor influencing students' success throughout their school career, present and future mental health, occupational endeavors, and nearly all of their social activities in adult life. Gresham (1981b) reviewed a number of studies supporting the need for programming for social education in attempting to mainstream handicapped students. He also stated that "since assessment and intervention are closely interrelated. . . school psychologists should be knowledgeable about social skills assessment techniques which yield a comprehensive picture of a child's social deficits" (Gresham, 1981a, p. 120). Indeed, despite school psychology's delayed attention to this topic, there is a growing awareness that social competence is a topic deserving the profession's closer scrutiny. In a speech presented at the Olympia Conference, John Guidubaldi, president of the National Association of School Psychologists, suggested four priorities for the profession (Guidubaldi, Note 1). Three of the four priorities addressed socialization, one of which included the topic of defining and assessing social competence. He summarized by saying: "The orientation to socialization theory, the attention to home based socializing conditions and the emphasis on social competence are interlocking elements of a broader mission to enhance the coping skills of all children at any age level, regardless of environmental context."

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Deficiencies in social skills are common among a wide range of special needs students who are considered handicapped for varying reasons (Gresham, 1981b; Kneedler, 1980). Besides deficient cognitive abilities, adaptive behavior is of equal concern in diagnosing mental retardation. A mentally retarded individual's adaptations to community and work are dependent upon levels of adaptive behavior (Reiter & Levi, 1980; Wehman & Bates, 1978). Social competence is considered a primary prerequisite for adaptive behavior or for an individual to act in an independent and socially responsible manner. Similarly, students with a wide variety of behavior disorders (e.g., social isolates, social aggression) drop out of school more frequently, are discharged from military service for bad conduct, and exhibit more adult mental health problems (Lahey & Kazdin, 1977). One could safely conclude that such individuals' occupational success would also be adversely affected. The social characteristics and development of learning disabled adolescents are also seen as critical (Alley & Deshler, 1979; Cook, 1979; Kronick, 1978, 1981). Mathews, Wang, and Fawcett (1982) suggested a relationship between the classification of learning disabled adolescents and deficits in occupational skills (including social skills) related to obtaining and keeping employment.

Defining Social Competence in a Job Related Context

There is no common definition of social competence or of the subsequent social skills that differentiate differing levels of competence. Many writers fail to differentiate these terms or use them interchangeably. In this paper the following definitions are offered as clarification: ***Social skills*** are task specific abilities that enable individuals to interact competently in social situations. In relation to assessment, multiple social skills important for an individual to perform competently in a particular social situation, can be identified and analyzed depending upon the unique social situation. On the other hand, ***social competence*** may be defined as "not an observable attribute of a person, but an evaluative term used by others observing an individual's social behavior in relation to a social situation (McFall, 1982, p. 13). Thus, occupational social competence is ***defined*** as: the repertoire of learned ***verbal*** and ***nonverbal*** behaviors (social skills)—***qualitatively*** determined by individuals' cognitive expectations, emotional responses, social perceptions, and genetic factors by which individuals ***interact*** interpersonally and environmentally in the context of fulfilling the requirements or obligations of producing work. Such skills would be ***flexible*** and ***functional*** to the extent that salient individuals choose to judge their appropriateness and productiveness in the current work situation.

Assessment of Social Skills

Assessment Implications

The preceeding discussion outlined the importance of social education to the mainstreaming of handicapped students into vocational education, and consequently, the adult world of productive work. Assessment plays a key role in accomplishing this goal. The present proliferation of techniques to teach social skills in a variety of contexts all incorporate assessment (Brolin & Kokska, 1979; Goldstein, Sprafkin, Gershaw, & Klein, 1980; Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1981; Schinke & Rose, 1976; Stephen, 1978). Sprafkin (1980) suggested that behavioral and social learning approaches tie assessment and intervention closely together. Since the major thrust of interpersonal skill training is the development and demonstration of new social behaviors, assessment techniques must discriminate which behaviors are dysfunctional and need remediation. It is important to keep in mind that some individuals may not be able to perform certain social skills. Social incompetence can result from inappropriate social environmental demands being placed upon an individual and therefore necessitate the investigation of the social environment.

No single assessment method provides comprehensive and functional information of the multiple parameters of occupationally related social skills. A procedure is needed whereby one can systematically move through the assessment process to: (a) validate social skill dysfunction, (b) define social context, (c) identify parameters of the social skill and (d) measure cognitive and motoric aspects of the social skill. All this necessitates multidisciplinary contributions to develop an increased understanding of the specific student and the social environment context. This final criterion, termed "interactional assessment" (McReynolds, 1979, p. 239), has been noticeably neglected in models of psychological and vocational evaluations.

A number of criteria have been offered for structuring a comprehensive evaluation methodology to assess social behavior (Bellack & Hersen, 1979; Eisler, 1976; Gresham, 1981a; McFall, 1982; Michelson & Wood, 1980; Sprafkin, 1980). Key guidelines are:

1. Normative data should be utilized in the screening of socially dysfunctional individuals.
2. Specific social circumstances in which the dysfunction is manifested should be described.
3. The probable source of the dysfunction should be described (i.e., anxiety, cognitive disturbance, operant influences, etc.).
4. Specific parameters of social skill deficits or excesses should be identified and described.
5. Specific skills necessary for competent performance in specific social circumstances should be identified and task analyzed.
6. Assessment information regarding target behaviors should functionally relate to the treatment strategy.
7. Baseline measures of the behaviors should be collected.
8. Reliability and validity of the measures should be considered.

These guidelines provide the basis for judging and suggesting techniques employed in assessment of occupational social skills as a part of vocational evaluations.

Assessment Model

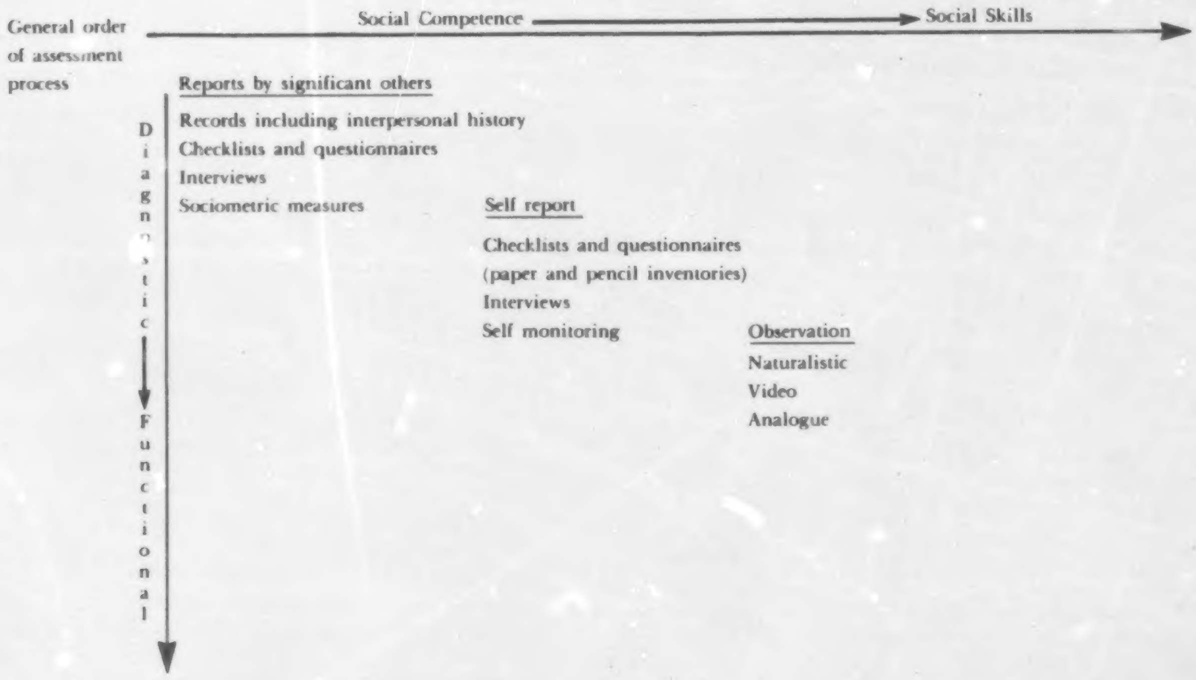
Assessment methodologies employed to assess social behavior within a socially oriented behavioral framework can be classified into three broad categories. Each method can be classified according to whom or where the measurement information is obtained. Figure 1 outlines how these methods are classified and the normal progression through the assessment process. Social competence information is typically established from reports by significant others concerning the referee and by the individual being evaluated (self-report). Social skills measurement information most useful to program development is usually gathered from observational procedures.

Background history. Information that typically accompanies a referral for psychological or vocational evaluation is usually general and may, or may not, be directly related to social competency. School records may include information relevant to the referee's interpersonal history from a variety of social contexts and from multiple respondents. Work related behaviors can be obtained from such sources as discipline reports, conduct grades, attendance reports, teacher reports, or previous psychological evaluations (Patten, 1981). The most practical use of such information is to guide in decisions concerning what other more specific and specialized screening procedures should be employed.

Checklists and questionaires. Psychometric sources (standardized techniques) such as checklists, rating scales, adaptive behavior scales, or more specific vocational behavior checklists are examples of other screening procedures. Psychometric devices are usually economical means to provide information about occupational social competence, if such devices adequately sample a domain or universe of all possible adaptive behaviors relevant to occupational social competence. Thus, content validity becomes an important criteria in choosing appropriate instruments. The reliability of such measures can be estimated by making similarity comparisons of independent ratings by more than one respondent. In addition, multiple respondents using the same psychometric device establishes the social significance or social validity of specific social behaviors. Social validation has been established as a necessary procedure for assessment from a social learning framework because it refers to the extent to which behavior change is considered socially useful by significant others in the environment (Wolf, 1978).

Problem checklists, questionnaires and rating scales can be classified either under self-report or other's report as shown in Figure 1. There is theoretical support for including another sample of self-concept (exclusively collected as a self-report measure) in assessing human relation skills. Self efficacy expectations are presumed to influence the level of

Figure 1
ASSESSMENT METHODS
FOR
SOCIAL COMPETENCE/SKILLS ASSESSMENT


General order of assessment process
Social Competence
Social Skills
Reports by significant others
Records including interpersonal history
Checklists and questionnaires
Interviews
Sociometric measures
Self report
Checklists and questionnaires
(paper and pencil inventories)
Interviews
Self monitoring
Observation
Naturalistic
Video
Analogue
Diagnostic
Functional

conviction (persistence of effort), intensity, or even if coping behaviors will be attempted by an individual (Bandura, Adams, & Beyer, 1977). Others have suggested that at least one prerequisite for social adjustment and occupational success is a positive view of self (Anthony, 1973; Burke & Sellin, 1972).

Despite the advantages of psychometric information, there are inherent limitations that inhibit sole reliance upon such measurements. For example, it is difficult, if not impossible, to accurately prescribe specific remedial techniques for dysfunctional social behaviors from scores on a test because: (a) baseline measures of behaviors are difficult to collect from most psychometric devices or may prove too general for use, (b) specific parameters of social skill dysfunctions cannot be described, (c) the validity of the information cannot yet be asserted with a degree of confidence to make educational/vocational decisions concerning an individual, and (d) it is difficult to interpret and integrate pertinent environmental information from psychometric data. Guidubaldi, Kehle, and Murray (1979) assert that "attempts to measure social and emotional competence suffer from the lack of well-developed instrumentation" (p. 247). The limitations of standardized tests necessitate psychologists' re-evaluation of the role of such instruments in assessing social competence. It is this author's view that psychometric data related to social competence can be used for screening purposes. To maximize assessment information gathered for functional purposes (in the design of remedial strategies) assessment strategies beyond psychometric information are required.

Sociometric measures. Sociometric procedures commonly include sociograms based on the rankings of group members. These measures are increasingly used in selection and as outcome measures in social skills research (Gresham, 1981a). Unfortunately, the utility of sociometric measures with older students has not been demonstrated. These assessment procedures are mentioned here because of their potential importance to social competence assessment. Peer acceptance in the work situation has empirical support as an important criteria to job success (Krantz, 1972; Mathews, et. al., 1980). Sociometric measures play a potentially important role in the assessment of occupational social competence, but in their present state of development with older client populations, such measures should be viewed cautiously.

Interviews. Interviews are the most frequently used assessment procedure, even within a behavioral assessment process (Goldfried & Davison, 1976). An interview can provide functional information and broaden the information base of an evaluation. The attractiveness of interviews is that they are an economical, practical, and flexible assessment procedure. Interviews are normally conducted with students, parents, teachers, or any other significant person knowledgeable of the referee's interpersonal history. Information collected from significant others can be employed to socially validate the student's social competence as it applies to his or her vocational endeavors.

Self-report interviews have traditionally been used as the initial phase of the assessment process. More efficient use of a client's interview can be accomplished if the interviewer has previously (during screening process) narrowed and defined a referee's social competence within a broad context (as provided by psychometric information). When a student's social competence can be pre-defined as dysfunctional related to specific and pertinent social situations, then certain skills can be identified as inadequate or not present. Thus, this information enables the interviewer to structure the self-report interview in a more specific and functional way. Specifically, skill competencies, cognitive factors, social perception, and motivational information considered relevant to occupationally related social competence become the emphasis of the interview process. Such factors are considered crucial to social competence and prove to be even more pertinent to older clients.

Unfortunately, no appropriately validated standardized assessment instruments have been developed to evaluate social perception, motivation, and cognitive factors related to social competence (Bellack, 1979). Meichenbaum (1976) has described a clinical interview process which focuses assessment on the interaction between cognitive processes—skill competencies—as well as, the client's behavioral repertoire. Thus, the interview is probably the most useful tool available to integrate cognitive variables into the assessment of occupational social skills.

Behavioral observations. To the extent possible, behavioral observation is the most useful assessment device in assessing social skills and in providing information for programming remedial social education. Fortunately, behavioral observation is already frequently used as an assessment technique as a part of many vocational evaluation procedures. Behavioral observations are used as a component of many commercial work sample systems and in vocational evaluations in rehabilitation centers. If multidisciplinary teams adhere to the previously described assessment model, maximal efficiency in the implementation of observational techniques directed toward occupational social skills can be accomplished. Clear problem identification can be established, pertinent social contexts can be identified, and occassions for observations can be established.

There are volumes of materials available concerning a multitude of observational techniques (i.e. Allessi, 1980; Bellack, 1979; Eisler, 1976; Goldfried & Davison; 1976). Examples of various observational techniques include: (a) self-monitoring; (b) naturalistic; (c) video; and (d) analogue. It is not within the scope of this paper to outline how observations should be carried out. Besides relating observational information to the other aspects of this occupational social skills assessment model; another goal of this paper is to discuss the advantages and disadvantages of including observations in a vocational evaluation of handicapped students. Observational information is considered necessary for a complete assessment of occupational social skills because psychometric information relates mostly to determining occupational social competence (recall the ***definition*** and ***differentiation*** between social competence and social skills). Self-report interview information surveys and describes cognitive, motivational, and perceptual factors related to pertinent social skills. Observational techniques are the only means available to accurately measure verbal and nonverbal responses (quality and quantity of the skill) and how a social skill dysfunction is manifested in a particular social situation.

As with the other assessment methods discussed as a part of the model for the evaluation of occupational social behavior, limitations exist to observational assessment of social behavior. It is unwise to use observational information as the sole indices of social skills. There are difficulties with rater bias, lack of concurrent validity (e.g. lack of relationship with peer acceptance), content validity, and predictive validity. Perhaps the major and most popularized disadvantage of this otherwise useful technique is that behavioral observation is a time consuming assessment technique. Contrary to this criticism concerning time, though, vocational evaluations are established in the tradition of utilizing behavioral observations. Many vocational evaluators in rehabilitation services and a growing number of vocational evaluation centers in public education would gladly assimilate information to support and refine their observational methods.

Conclusion

No single measure or assessment method can describe a comprehensive and useful picture of the multiple parameters of occupational social skills and subsequent social competence. A combination of methods are required to establish the social validity of particular social skills, measure both the cognitive and motoric aspects of the social skill constructs, and assess how the social environment interacts to produce an individual's level of occupational social competence. As Guidubaldi, Kehle, and Murray (1979) stated, "the justification of assessment lies in its generation of remedial strategies" (p. 245). To reliably and validly collect information for remedial programs, evaluators of handicapped students need to expand their assessment techniques beyond one or two sources. Traditionally, many psychologists have tended to focus their efforts in assessment on identification and labeling of special needs students rather than identifying, "functional, unique, learning needs of a particular student" (Phelps & Wentling, 1977, p. 22). Working within the suggested occupational social competence/skills assessment model through the coordination of a multidisciplinary team effort, school psychologists can improve the functional use of a vocational evaluation to better meet the vocational needs of handicapped students.

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Integrating Vocational Assessment Data Into School Psychological Evaluations

*Edward M. Levinson & John W. Shepard**

According to career development theory, each person must achieve an individual adaptation to the world of work. The relationship between psychology and work is well documented in the literature and has been explored by both psychologists (Bordin, Nachman, & Segal, 1963; Bruner, 1974; Erikson, 1968; Freud, 1930; Holland, 1959; Jung, 1960; Murphy, 1973; Roe, 1956; Super, 1957a; Tiedeman & O'Hara, 1963) and career development theorists. School administrators, despite their traditional emphasis on academics in instructional programs, have come to believe that schools should provide specific job training for students (McCleary & Thomson, 1979). Thanks to federal legislation, vocational education has now become a required offering for all students, including the handicapped.

Despite this increased emphasis on vocational programming, underemployment and unemployment rates among the handicapped are staggering. Levitan and Taggart (1977) noted that 40% of all disabled adults are employed compared to 74% of the non-disabled population. Statistics on the mentally retarded indicate that only 21% are fully employed when they finish school, while 40% are under-employed and 26% are unemployed (Hightower, 1975).

Given such data, it appears that a great deal of work still needs to be done in the area of vocational programming for the handicapped. Given our nation's generally high employment rate and current economic status, similar needs for vocational programming might be said to exist among the non-handicapped as well. School psychologists, with their knowledge of assessment, individual learning styles, educational programs, and their experience in working with both handicapped and non-handicapped students, can make significant contributions to the process of vocational programming for these students. In an effort to aid school psychologists in doing so, the present paper will:

1. Suggest vocational assessment strategies (including areas to be assessed and assessment techniques to employ) for preadolescent and adolescent clients, utilizing concepts of career development as a basis. (It should be noted that little has been written on the career development of handicapped students. Readers should be aware that the career development information presented herein is adapted from theories which describe normal development. As such, it does not apply to all handicapped students).
2. Discuss potential recommendations which emanate from the vocational assessment of preadolescent and adolescent clients.
3. Discuss ways of incorporating these findings and recommendations into a useful and useable report.

Vocational/Career Development in Preadolescence, Ages 11-14

Ginzberg, Ginsburg, Axelrod, and Herma (1951) divided early adolescent into two substages of career development; the Interest Stage extends from ages 12 or 13, to 14. During the Interest Stage, adolescents tend to focus on activities and future goals which relate to present interests. As they move into the Capacity Stage, they become more aware of their strengths and weaknesses, and realize that ability and aptitude must be considered along with interest in making career plans. It is in the Capacity Stage that preadolescents develop their capacities for cooperation and productive work. The following are among the career development objectives for early adolescents listed by Seligman (1980):

1. Gaining awareness of interests, aptitudes, and values, and differentiating among the three.
2. Becoming aware of own levels of aspiration.
3. Developing decision making, planning, communication, and problem solving skills.
4. Assuming responsibility for career related decisions.
5. Appreciating work as a rewarding and enduring institution.
6. Appreciating and considering the broad variety of careers.
7. Realizing that different occupations vary in requirements and rewards.
8. Becoming aware of impending academic choices and their relationship to post high school alternatives.
9. Developing tentative career goals.

Consequently, an appropriate vocational/career assessment component for this age group must emphasize the assessment of abilities, interests, work habits, and values. Given the emotional factors which affect adolescent development, a social/emotional component should also be included to identify any obstacles or barriers preventing successful attainment of career development objectives. School psychologists should interpret their assessment results to clients via counseling, and work toward facilitating an awareness of clients' abilities, interests, values, and work habits (including personality factors), and how these traits interrelate and affect potential vocational choice and satisfaction. The school psychologist's goal should be to provide the preadolescent with necessary information which enables them to make informed and realistic career decisions.

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Vocational/Career Development in Adolescents, Ages 14-18

Ginzberg et al. (1951) viewed career development during the high school years as consisting of two stages, the Values Stage-occurring between ages 15 and 16 and the Tentative Stage-occurring between ages 17 and 18. During the Values Stage, adolescents become more aware of the factors involved in career planning, and are increasingly concerned about their own values and the future. In the Tentative Stage, the importance of interests, abilities and values diminish, and reality factors are emphasized. Super (1957b) viewed the high school years as comprising the first substage of the Exploration Stage—a period characterized by greater awareness of the self and of the world of work, and a period for trying out new roles. Although most theorists attach a different label to career development during adolescence, most seem to agree that it is a stage characterized by a shift in focus from the self to the world of work, increased exploration and planning, and increased realism in career planning.

Havighurst (1972) proposed the following developmental tasks for adolescents:

1. Achieve emotional separation and independence from parents and peer group.
2. Formulate tentative career plans and goals.
3. Acquire a clear sense of own values, interests, and abilities, and the capacity for self examination.
4. Acquire knowledge of the world of work and relevant options.
5. Develop decision making skills.
6. Develop skills and confidence in handling everyday tasks.

Consequently, an appropriate vocational/career assessment component for this age group might involve an assessment of values, interests, and abilities, but even more importantly, an assessment of career maturity, career decision making skills, and knowledge of the world of work and various vocational and employment options.

When considering the results of the assessment of adolescents, a number of recommendations should be considered. For those adolescents who do not yet have adequate knowledge of self, counseling is indicated to facilitate acquisition of this knowledge. Personal/social counseling may be indicated when adjustment difficulties prevent successful negotiation of the developmental tasks appropriate for adolescents. For those adolescents who have inadequate knowledge of the world of work, career exploration groups or activities might be appropriate. Vocational/career counseling might be indicated for adolescents who are unable to relate their knowledge of self to their knowledge of the world of work, or are unable to make necessary vocational decisions. In assessment of the adolescent, foremost in school psychologists' minds should be whether the adolescent is capable of making important and timely vocational decisions in an informed and realistic manner. Recommendations at this stage should be geared to facilitate this decision making process.

The reader should now have an elementary grasp of the age appropriate career development tasks of adolescents, and should be able to surmise key areas to be included in the vocational assessment of preadolescents and adolescents. It is now appropriate to turn to a discussion of the means by which such information can be collected and integrated into report form.

Use of Traditionally Elicited Psychological Data

The school psychologist need not turn entirely to alternate strategies in collecting and reporting information pertinent to their clients' occupational development. Typically, assessment devices presently employed by psychologists can be modified to elicit an abundance of vocationally relevant data. Psychological interviews can be expanded to touch upon students' perceived occupational interests, strengths, liabilities, and goals. Parental interviews can be used to assess the nature of a student's past vocational experiences. Psychological observations and teacher and parental interviews can be used in the analysis of a student's work habits, attitudes, personal mannerisms, and social behaviors. Vocational data can also be gleaned from traditionally obtained psychological and educational test findings. Specifically, WISC-R and WAIS-R subtest scores, achievement test results, and personality measures all supply career related information.

Vocationally Specific Instruments

There are numerous vocational instruments which are appropriate for use with secondary students. Such measures as the ***Career Maturity Scale, Career Development Inventory*** and ***Hall Occupational Orientation Inventory*** can be used to assess students' work attitudes and career decision making skills. Additionally, the ***Interest Checklist***, the ***Wide Range Interest Opinion Test*** and the ***Program for Assessing Youth Employment Skills*** (PAYES) can be employed in evaluating career interests. Each of these measures can be administered to small groups of students in generally less than one hour. They essentially require little administrative involvement on the part of the examiner.

Integrating Vocational Findings

The inclusion of vocational data should not significantly alter the format of a psychological report. Background information, observations, test findings, conclusions, and recommendations should still provide the essence and structure of most psychological writeups. The basic idea is to incorporate vocational findings into each phase of the report (e.g., vocationally related background data will accompany other antecedent information, vocational test results will be reported with psychometric findings and vocationally relevant conclusions and recommendations will be matched with other summary statements and suggestions).

The following outline is offered as an example of how a vocationally oriented report can be organized:

Section I: Background Information
- A. Reason for Referral
- B. Age, grade, school, sex
- C. Medical Diagnosis
- D. Physical Appearance
- E. Background History
- F. Other relevant information (including evaluation results from employment and rehabilitation agencies)

Section II-Test Findings
- A. Achievement measures
- B. WISC-R/WAIS-R
- C. Personality measures
- D. Vocational interest inventories
- E. Work attitude and values inventories
- F. Vocational Aptitude Measures

Section III-Behavioral Information
- A. Personal Mannerisms, work habits, reliability
- B. Emotional temperament
- C. Interests, attitudes, needs

Section IV-Summary Statements
- A. Integration of data into summary report on students present functioning
- B. Includes acknowledgement of students' intellectual, educational, emotional, and vocational standing
- C. Should describe implications for the student's present and future life experiences

Section V-Recommendations
- A. Short term recommendations
- B. Long term recommendations
- C. Specific services and training needs
- D. Alternate strategies

Summary

A need exists for the vocational as well as academic preparation of students. With their training, experience, and unique expertise, school psychologists are likely professionals to aid in this preparation. The present paper demonstrated how school psychologists, armed with knowledge of career development theory, can generate vocational/career relevant data from their psychological evaluations. Much of this data can be adapted from traditional tests and techniques, while additional data can be obtained from use of vocationally specific assessment devices. When combined with the information typically obtained from a school psychological evaluation, vocational/career assessment data adds to the comprehensiveness of the evaluation. In addition to the academic and behavioral recommendations which typically emanate from these evaluations, vocational/career assessment data allows vocationally specific recommendations to be made as well. Thus, school psychologists can impact on the occupational as well as educational and social development of the student with whom they work.

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BANQUET ADDRESS

The Secondary School Psychologist—Advice for an Evolving Specialty in a Changing Society

John Guidubaldi*

I bring you greetings from your national association and thank you for including me in this significant program. It is truly gratifying to see such good attendance at a conference focusing on specialized school psychology services for secondary pupils. As I visually scan this sizeable audience, I remember when Tom Hohenshil was a lone pioneer in this movement. At that time, I was the editor of ***The School Psychology Digest*** which has now been renamed the ***School Psychology Review.*** Tom approached me with a proposal to devote a special issue of the ***Digest*** to the topic of vocational school psychology, and through his persuasion, convinced me that this suggested specialty was truly needed in our profession. I believe that this ***Digest*** issue, edited by Tom in the summer of 1974, marked the formal beginning of the vocational school psychology specialty. In his editorial introduction, he issued the following challenge:

> . . . We are really suggesting that the assessment and consultation skills of the psychologist be applied to the development of programs to facilitate the career development of public school students. In order to be able to apply these skills, the psychologist must be thoroughly familiar with career and vocational education programs designed to facilitate this important aspect of human development. This issue of the ***Digest*** provides a beginning and, hopefully, will sensitize school psychologists to their potential contributions in this fertile new area. (1974, p. 3)

The response to this ***Digest*** issue was so gratifying that Tom was asked to guest edit a second vocational school psychology issue a few years later (***The School Psychology Digest,*** 1978); and NASP, in March of 1979, subsequently approved this set of services as the first officially recognized specialty in our profession.

Having personally directed an early childhood school psychology specialization training program at Kent State University for the past 10 years, I expressed my support for specialization in a recent article (Guidubaldi, 1982), ". . . particularly where such approaches meet criteria of marketability, sufficient foundation of knowledge, and adaptation to social and legislative trends" (p. 3). Clearly, vocational school psychology meets these criteria. I fully expect that the graduates of Hohenshil's innovative doctoral training program will conclusively demonstrate the value of this needed orientation.

My purpose in this presentation is not to elaborate on specialized vocational school psychology services, but rather to share with you my beliefs about a few of the issues I consider to be essential for school psychologists in working with both normal and handicapped children of any age. Consistent with the current move to expand the specialty title from "vocational" to "secondary" school psychology, I suggest that acknowledgment of these issues facilitates attention to the needs of ***all*** adolescents. Specifically, these issues include (a) a theoretical orientation toward socialization as the basis for psychological diagnosis and remediation plans, (b) an increasing sensitivity to social competence as a focus for assessment, and (c) an appreciation for societal changes that affect the development and mental health of children and adolescents.

Socialization as a Foundation

In my presentation at the Olympia Conference last November, I noted that the disciplines of psychology have yet to develop an integrated theoretical understanding of the manner in which a child develops into a mature, mentally healthy adult. Our rudimentary understanding of the socialization process currently includes a recognition of some important components, such as the power of reinforcement schedules, normative data on motor and language development, etc., but these are only fragmented pieces of the total process and offer only a partial understanding of the complex interplay between the developing child and his ever-changing environment. As secondary school psychologists, you are well aware that an adolescent's behavior is determined by a wide variety of past and current socializing conditions, yet your conceptual basis for understanding this course of development is quite limited. I believe that a more comprehensive understanding is possible if we study the following issues.

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First, we need to analyze the dynamics of socializing agents. Who are the key persons or reference groups that shape an individual child's values, ambitions, and standards of behavior? How does the influence of a particular person or group wax or wane in the course of the child's development? Which groups control the most powerful reinforcers and aversive stimuli? Do the important others in the child's life present a consistent, congruent set of values and standards, or are they producing conflicting messages? On what basis does the child choose among conflicting prescriptions for behaviors? These are only a few of the many questions that must be answered in order to understand the role of reference groups and socializing agents. The social psychologist, Muzafer Sherif (1964), tells us that he can predict a person's behavior better than we can with our arsenal of tests if he only knows what groups the individual belongs to or aspires to join.

Secondly, we must develop a more comprehensive understanding of the mechanisms by which a socializing agent transmits his or her influence to the child. It is not enough to know a few ways to use operant conditioning. We need to know how age, sex, social class, and other variables influence the effectiveness of classes of reinforcers. Are there sex differences in responsiveness to social reinforcers or knowledge of correctness? How does group reinforcement interact with individual reinforcement? Does corporal punishment result in more long-range psychological scars than shaming or verbal abuse? Perhaps the most promising and least understood area of inquiry is modeling. We've only begun to explore this powerful mechanism of socialization, and have very limited understanding of its applications to school psychologists' practice, yet all of us know that it has been a critical force in our own development.

Thirdly, we need to have a clearer understanding of standards and values as intermediate products of the socialization process. In our diagnostic work we see wide variations in sex-role standards, need for achievement, altruism, and other orientations that guide behavior. How do these variations develop? How can we modify a sex-role standard to deemphasize aggression or passivity most effectively? How can we shift a child's achievement standards to a higher plane? Are the child's current standards and values resistant to change, or will they be easily modified by puberty, entrance into the occupational world, or other natural developmental progression? Most importantly, are the individual's standards and values compatible with his environment? Do they result in behaviors that yield feelings of socially valued competence and satisfactory intimacy relationships? Such questions are at the heart of critical educational issues such as respect for cultural pluralism, bilingual education, and mainstreaming handicapped children. Certainly in assessing an adolescent's readiness to enter the occupational world, an examination of the compatibility of his or her standards and values with the demands of the work setting is essential.

For a more comprehensive understanding of socialization, I also suggest that we study Robert White's theory of competence motivation (1959, 1960) and Albert Bandura's principle of self-efficacy (1977). These positions recognize the important role of cognitive mediations and emphasize expectations, self esteem, coping behavior, and reinforcements. They thus provide a meaningful theoretical bridge between behaviorism and cognitive psychology that can serve as a solid foundation for interventions.

For example, Bandura's self-efficacy position extends his previous work on modeling, vicarious reinforcement, and cognitive mediation of behavior. It has implications for counseling and behavior modification interventions; but most importantly, it helps us to recognize important factors in both normal and atypical development. Basically, Bandura argues that cognitive processes mediate changes in behavior and that cognitive events are most easily altered by the experience of mastery that comes from effective performance. Many of you are familiar with Bandura's previous work which demonstrated that Skinnerian learning theory couldn't explain a wide variety of learned behaviors. Research evidence clearly showed that the learner ***cognitively interpreted*** cues, response consequences, and other environmental events, and that the ***interpretations*** determined how the individual would behave. The new addition to Bandura's position emphasizes the importance of expectations—not only the expectations about outcomes of behavior, but also expectations about one's ***competence*** to achieve the outcome. Bandura describes it this way:

> An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes. . . individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities such information does not influence their behavior. In this conceptual system, expectations of personal mastery affect both initiation and persistence of coping behavior. . . Given appropriate skills and adequate incentives, efficacy expectations are a major determinant of people's choice of activities, how much effort they will expend, and of how long they will sustain effort in dealing with stressful situations. (pp. 193-194)

The relevance of this position is obvious and its validity is confirmed in our everyday experience with children and adolescents who won't try even apparently easy tasks because of a fear of failure. Handicapped students may be particularly susceptible to low self-efficacy perceptions and may refuse to give effort to tasks that are unrelated to their particular area of deficit. We have come to label this generalized lack of effort as "learned helplessness"—a familiar obstacle to academic and vocational development.

Bandura suggests raising efficacy expectations through such means as increased direct success experiences, observations of successful accomplishments by peer group models (who preferably are similar to the child), verbal persuasion that increases the child's confidence, and decreasing fear and other emotional states that lead to avoidance.

Focus on Social Competence

My second recommendation is that we focus on the child's development of social competence and devise more effective ways to assess this complex set of skills. Recent legal mandates for multi-factored assessments didn't result from court decisions alone. Researchers began an intensive effort to find alternatives or supplements to the IQ test during the early 70s. The work of Bloom (1976), Kohn and Rosman (1972), White (1973), Anderson and Messick (1974), and many others emphasized the need to identify and define noncognitive characteristics that could predict successful development. This movement may have been prompted by the washout of long-range IQ gains for disadvantaged pupils who attended compensatory preschool programs, or it may have developed as a response to the disproportionate number of minority group children placed in special education classes on the basis of IQ tests. Whatever its origin, this new focus has yielded some impressive research results that illustrate effective prediction of primary grade academic success by preschool and kindergarten social-emotional competence measures (e.g., Guidubaldi, 1969; Harper, Guidubaldi, & Kehle, 1978; Kohn & Rosman, 1972, 1974; Perry, Guidubaldi, & Kehle, 1979; Stevenson, Parker, & Wilkinson, 1976).

School psychologists attempting to assess social and emotional functioning of handicapped students need to recognize that this constellation of attitudes and behaviors may be more influential in determining future success for handicapped individuals than for their unimpaired age-mates. For many handicapping conditions, such specific variables may make the difference between social rejection or acceptance, academic effort or alienation, and satisfactory vocational adjustment versus discouragement and unemployment.

Unfortunately, attempts to devise standardized measures of social competence have not yet yielded satisfactory instruments that can be applied unilaterally across the school-age span. Problems in definition of social competence have undoubtedly contributed to the dearth of valid and reliable instruments. In any event, I recommend that psychologists employ a combination of teacher and parent rating scales, sociometric devices, and naturalistic observations in school settings. Such a multi-source, multi-factored approach has several inherent advantages over standardized tests, especially since it allows the psychologist to assess the pupil's interactions with significant others in his or her normal activity settings.

The Impact of Societal Change

The socialization process and the child's development of social competencies are obviously affected by changes in society that influence the roles of socializing agents. During the past 15 years, dramatic changes have occurred in the American family as a result of such cultural shifts as increases in divorce rates, maternal employment, and residential mobility. These changes have seriously impaired the child-rearing capability of American families in recent years, and they are likely to continue at an accelerated pace in the future. For example, Hetherington (1979) reports that our divorce rate doubled between 1965 and 1978, and projections are that 40% of current marriages of young adults can be expected to end in divorce. She further reports a projection that 40% to 50% of children born in the past decade will spend some time living in a single-parent family, and she concludes that the average length of time children currently spend in a single-parent home is about six years.

A second major trend in spousal relations is the marked increase in maternal employment outside the home. Hoffman (1980) provides a comprehensive analysis of this phenomenon, indicating that in 1979, over 59% of mothers, living with husbands, who had school-aged children but no preschoolers, were employed. Where no husband was present, over 72% were employed. Clearly, the majority of our nation's mothers are now employed outside the home—a circumstance that necessitates a reduction in time spent with husbands and children for even the most conscientious women.

With a substantial decrease in intact nuclear families and in maternal child-rearing time, the stability of the child's relationships with other socializing agents would seem to be even more important than it has been previously. Unfortunately, our mobility rate is now so high that one cannot count on stable neighborhood peer groups or extended family members to fill the void. According to the Bureau of Census (1977), 18% of all families (40,000,000 persons) now change homes each year.

These and other societal changes create new challenges for school psychologists who can no longer rely on families to provide familiar and traditional socializing influences. Considering the traditional home-school partnership in socializing children, the development of school-based preventive and remedial strategies to compensate for family disruption deserves priority status in present and future school psychological services.

Each of these factors: a focus on socialization, social competence, and societal changes that affect development are critical grist for the secondary school psychology mill. They provide a basis for broadened emphasis on services to all secondary students as they pursue their preparation for adult roles. In regard to the specific task of vocational preparation, I'm sure you realize that your mission to assist young people in their rites of passage into the adult occupational world has become increasingly complicated by technological advances and adult sex role changes. These have substantially modified traditional career options, making your task seem virtually impossible at times as you attempt to improve the match between the student's capabilities and the demands of the constantly fluctuating work environment. If you base your diagnostic and remedial efforts on an integrated theory of socialization, emphasize the development of social competence, and closely monitor societal changes that affect development, your services will be effective in any time context and compatible with new adult environments.

I applaud your interest and initiative in this pioneering effort, and I pledge my continuing support.

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APPENDIX A

HOHENSHIL, T. H. Roles for school psychology in vocational education programs for handicapped students. In T. H. Hohenshil & W. T. Anderson (Eds.), *School psychological services in secondary vocational education: Roles in programs for handicapped students.* Blacksburg, VA: Virginia Tech, 1981 (ERIC # ED 215245). Proceedings of the First National Conference on Vocational School Psychology held at Virginia Tech in May of 1981.

Roles for School Psychology in Vocational Education Programs for Handicapped Students

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NASP National Committee on Vocational School Psychology
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It is a pleasure for me to serve as one of the presenters for this conference on vocational school psychology. As you know, the conference is supported by a vocational education grant with the general purpose of familiarizing school psychologists with vocational education programs for handicapped persons, and the roles that school psychologists can play in these programs. It is my hope that the activities included in this two-day period will facilitate the expansion of school psychological services at the secondary level in general, and especially in occupational preparation programs. I thought you would be interested in knowing that your colleagues in the audience represent 10 different states and include psychologists employed in public schools, vocational education regional centers, university school psychology training programs, university vocational teacher education programs, university counselor education programs, community colleges, state department of education personnel in school psychology and vocational education, and corrections. It is important to note that *all* of these settings employ school psychologists to work with occupational training programs for youth and adults.

The historical development of vocational school psychology spans less than a decade, yet the National Association of School Psychologists (NASP) viewed the movement with such promise that the NASP Delegate Assembly unanimously approved it as the first recognized specialty in the profession in March of 1979. More recently, the President of NASP and others have described vocational school psychology as a major thrust of the profession during this decade (Fagan, 1981; Grimes, 1981; and Trachtman, 1981). The rationale for the development and popularity of vocational school psychology is partially rooted in the historical development of the profession itself, but more significantly is related to several pieces of federal legislation, namely the Vocational Education Amendments of 1976, the Career Education Incentive Act of 1975, the Vocational Rehabilitation Act of 1973 (especially Sections 503 and 504), the Education for All Handicapped Children Act of 1975, and the 1978 Amendments of the Comprehensive Employment and Training Act. These pieces of legislation have forged new relationships between and among professional education personnel, parents, the general pubic, and employers.

From a historical perspective, school psychology has evolved through a number of developmental stages in an effort to meet the everchanging needs of a wide variety of clientele. Traditionally perceived as a "tester and classifier" of children for special education classes, the school psychologist has more recently functioned as an educational and psychological consultant, developmental specialist, behavior modification expert, facilitator of educational change, curriculum specialist, and organizational development specialist, as well as the traditional diagnostician and therapeutic agent (Barclay, 1973; Bardon & Bennett, 1974; Bergan & Tombari, 1976; Grimes, 1981; Kabler, 1977; Kelman & Wolff, 1976; and Trachtman, 1981).

Since its inception, school psychology has been closely related to special education, primarily at the elementary level, while vocational education was provided primarily at the secondary and post-secondary levels. Thus, school psychologists and vocational educators have normally functioned at different levels of education serving different clientele. The more recent roles proposed for school psychologists are designed to apply the knowledge and skills of practitioners to the total school environment by identifying those aspects which tend to produce learning and behavioral problems, and modifying or eliminating them. However, as noted by

Hohenshil and Warden (1978), few knowledgeable people would disagree that most school psychologists still function primarily at the elementary school level, whether it be in diagnostic, therapeutic, or consultation roles. Involvement at the secondary level is usually confined to retesting for special education and referral of students exhibiting severe behavioral problems. This contention is further supported by the professional literature. For example, Kramer and Nagle (1980), in an informal survey of the 1974-77 issues of the *Journal of School Psychology*, *Psychology in the Schools*, and *The School Psychology Digest*, found that only 7% of the research articles involved high school aged subjects. In contrast, 82% of the research articles related to elementary school children (K-5), while 11% dealt with middle school (6-8 grade) children.

As Fagen (1981) notes, school psychology and special education need to devote more attention to the career development of secondary handicapped students. For decades, secondary psychological services have been scarcely available. Handicapped students placed in elementary school special education programs during the past decade are now in, or are preparing to leave secondary education. Nationwide concern for the handicapped and their vocational capabilities is growing as handicapped students leave the protected educational setting and are forced into the competitive employment market. Parents and handicapped students alike clearly recognize that success in competitive employment is almost mandatory in order to build independence in life. In the 1980's, school psychologists will increasingly be called upon to help handicapped students *and their families* bridge the gap between school and society, a gap which is frequently much wider for handicapped than nonhandicapped persons. As Fagan further contends, this will require a dramatic shift of the focus of psychological services from predominantly elementary school to secondary and even post-secondary levels; from predominantly placement orientation to follow-through and service orientations; and from basic education concerns to broader mental health and vocational concerns.

Vocational Education Needs

Over the last sixty-five years, vocational education programs have received the largest and most continuous federal support of any single aspect of the public school curriculum. Vocational education programs became a part of the public school curriculum with the passage of the Smith Hughes Act of 1917. During the intervening years, Congress provided continuous and expanded federal funding through a variety of legislative acts, the most recent of which is Title II of P.L. 94-482 (Vocational Amendments of 1976). At the present time, such funding is available for training in any occupation requiring less than a baccalaureate degree for entry level employment. In 1980, more than 50% of all secondary youth were enrolled in some type of occupational training program.

In reality, vocational education has become a Congressional instrument to combat the lack of occupational training and high dropout and unemployment rates among disadvantaged and handicapped youth. The Vocational Education Amendments of 1968 reflected the concern of Congress for an expanded vocational education role in the education of youth with special learning needs. In that far reaching legislation, categorical funding was mandated to assure that at least 10% of the federal vocational monies to the states was spent for vocational programs for the handicapped, and 15% for disadvantaged youth. The Vocational Admendments of 1976 continue this type of categorical funding by requiring the states to spend 10% of their federal vocational monies for handicapped and 20% for the disadvantaged. This legislation also requires that, for the first time, states must match these federal dollars (Hohenshil and Warden, 1978).

The critical need for school psychological services in vocational education programs, especially those for the disadvantaged and handicapped, has been well documented in the professional literature as well as in practice. The literature in vocational education is replete with references citing the dramatic need for diagnostic services to identify, place, plan, and evaluate instructional programs for handicapped and disadvantaged students. There is also great need for revision of traditional vocational curricula, for vocational teacher in-service and pre-service education, and for consultation services regarding instructional and behavior management techniques to use with special needs students (Batsche, 1981; Dietrich, 1980; O'Brien, 1980; Phelps, 1978; Sitlington & Wimmer, 1978; Wall, 1976). These concerns and needs have arisen simply because the majority of vocational teachers were not provided with adequate training in their pre-service education programs to effectively instruct youth with special learning and emotional needs. Now they are being required by law to work with these students both within their regular classrooms, as well as in special vocational classes for the more severely handicapped (Hohenshil, 1974; Hohenshil, Ryan & Warden, 1978).

In a parallel form of vocational training, the Comprehensive Employment and Training Amendments of 1978 (CETA), Congress made an effort to target available resources sharply on individuals having the greatest need. One of the major criticisms of CETA's previous performance made by the House Committee on Education and Labor was its poor record with handicapped persons. The Committee therefore recommended several amendments which strengthened the commitment of CETA to serving the handicapped. Among these was a significantly increased emphasis upon assessment and counseling services. There were also provisions to force CETA into an increasingly close relationship with public school vocational programs to reduce duplication of effort and fully utilize resources. Although some people question the appropriateness of school psychology services for adults, this may well be a new frontier in the profession. There is no reason why the skills of school psychologists have to be limited to those clients below the age of 21. *The "school" in school psychology should be extrapolated and applied* *to schooling across the lifespan, rather than being artifically limited to grade 12.*

The target populations for CETA have primarily involved those frequently classified as socially, educationally, culturally, and/or economically disadvantaged, and those with various types of handicapping conditions. Frequently, these are individuals who have dropped out of school before graduation, and have poor reading, writing, and math skills, often to the point of rendering them functionally illiterate. These are often the students who have been "passed" through school until old enough to drop out. If they did make it through high school, it was probably in a general curriculum which provided no salable vocational skills for entry level employment. They would be recognized as our "grown up" learning disabled, disadvantaged, poorly motivated students, often with below average "tested" mental ability. Frequently, they attended schools without adequate special services to diagnose their learning problems nor adequate special or vocational education programs and supportive services to assist them even if diagnosed. In both the popular and professional literature, these are the students public school failed. They represent some of the most difficult learning problems existing anywhere in this nation. In many instances, adult vocational education programs are their last chance to be self-supporting, independent human beings (Hohenshil, 1979).

The Birth of Vocational School Psychology

During the 1970's, the stage was set to initiate the vocational school psychology concept in response to five landmark pieces of federal legislation which provided for significantly expanded career development services to handicapped students. The Vocational Rehabilitation Act, especially Sections 503 and 504 and the Education for All Handicapped Children Act virtually assured that handicapped persons have the same right of participation in career development programs as non-handicapped individuals. The Vocational Education Amendments Act, the Career Education Incentive Act, and the CETA Amendments all provided federal funding to assist handicapped individuals select, prepare for, and participate in gainful employment. In a short period of six years, these five pieces of legislation began requiring a variety of professional areas (vocational education, special education, career education, rehabilitation, school psychology and school counseling) to work closely together in order to deliver high quality career development programs and services to handicapped youth and adults.

One thing which was readily apparent in the early 1970's was that there was no one professional group which was prepared to provide high quality instructional and support services in vocational and career education programs for handicapped persons. For the most part, vocational educators were not well trained to work with handicapped persons; special educators lacked knowledge and skills in vocational and career education; rehabilitation counselors were frequently not very knowledgeable about public school vocational education programs; most school counselors were not adequately trained to work with the handicapped; and most school psychologists lacked information about occupational training programs and the skills necessary to serve handicapped adolescents and adults in such programs.

Thus, there was not a single one of the traditional instructional or support groups that was trained to provide comprehensive career development service to handicapped clients. It seemed at the time that there were three options available in the support services area. One would be to create a completely new kind of service provider. However, one need only look to the fate of the child development specialist of the 1960's to predict the future of a completely new service provider in the schools. A second option would be to expand school counselor training to include diagnostic skills and knowledge about handicapping conditions. However, it was felt that this would be prohibitive because it would take an additional year or two of training. The third option would be to take school psychologists who already had diagnostic skills and the skills necessary to serve handicapped youth, and provide additional training in vocational and career education for handicapped persons, vocational assessment skills, and career planning skills. Thus, the vocational school psychology concept was born as a field of study, practice, and research that in effect blends the knowledge and skill of traditional school psychology, vocational education for the handicapped, career planning processes, and vocational rehabilitation. The vocational school psychologist is one who has knowledge and skills in each of these professional areas. In effect, psychologists trained in the vocational aspects of school psychology can not only provide services in the traditional manner to elementary schools, but also have the knowledge and skills to provide equally high quality services to adolescents and adults (both handicapped and nonhandicapped) in occupational training programs.

Introducing the Vocational Aspects of School Psychology

Recognizing the critical need for the types of services that could be provided by school psychologists with vocational competencies, and the high potential for the profession, the author conducted a comprehensive computer assisted search of the literature in 1973 to determine if there was any significant activity in the vocational areas by school psychologists. The computer assisted search included all the major document bases in psychology, vocational education, special education, school counseling, and rehabilitation. This search did not produce a single reference which dealt specifically with the potential roles of the school psychologist in occupational training programs. This was a rather startling discovery, especially in view of the large federal, state, and local expenditures for this type of educational programming since 1917.

Leadership in the National Association of School Psychologists quickly recognized the promise of vocational school psychology. In 1974, a special issue of the *The School Psychology Digest* was devoted to the roles of school psychology in career education programs. From 1974-1977 a number of programs on the vocational aspects of school psychology were presented at NASP National Conventions and several articles appeared in the *Journal of School Psychology*, *Psychology in the Schools*, and *The School Psychology Digest*. In 1977, NASP appointed the National Commission to study the School Psychologist's Role in Career and Vocational Education. 1978 was a productive year for vocational school psychology. It saw the publication of another special issue of *The School Psychology Digest*, this time devoted to the theme: "Vocational Education for Youth with Special Learning Needs: Roles for the Vocational School Psychologist." The first article about vocational school psychology in the *American Vocational Journal* was also published in that year. In a most significant development (March, 1979), the NASP Delegate Assembly unanimously adopted the *Study Report of the National Commission to Study the School Psychologists' Role in Career and Vocational Education*. This *Report* called for increased involvement of school psychology in career development programs as well as the development of a specialty in vocational psychology to serve secondary students and adults. Since the unanimous approval of this *Report* was a major milestone, its full content and recommendations follow:

REPORT: COMMISSION TO STUDY THE SCHOOL PSYCHOLOGISTS' ROLE IN CAREER AND VOCATIONAL EDUCATION

INTRODUCTION

In July of 1977, the President of the National Association of School Psychologists appointed the co-chairpersons of the Commission to Study the School Psychologists' Role in Career and Vocational Education. Leaders in education or school psychology who had expertise in either career education or vocational education were enlisted from across the nation. The nine member Commission proceeded to formulate a set of recommendations which could constitute a position statement of the National Association of School Psychologists.

In almost every reference regarding vocational education for special needs students, vocational educators cite the urgent need for diagnostic services to identify, place students, and plan and evaluate instructional programs for the handicapped and disadvantaged. They also see a great need for revision of vocational curriculum, the extensive need for vocational teacher inservice and preservice education, and the need for consultation services regarding behavior management and instructional techniques to use with handicapped and disadvantaged youth. These concerns and needs have arisen simply because most vocational teachers were nor provided adequate training in their preservice education programs to effectively instruct special needs youth. The individual education plans and least restrictive environment stipulations required in P.L. 94-142 also cause concern for vocational educators for the same reasons.

Vocational educators are in need of school psychological services to assist them to serve special needs students, but it is not enough to prepare school psychologists to function in vocational-technical educational settings alone. Vocational-technical education is only one aspect of career education. If the profession is to embark upon serving vocational technical education, possession of skills and knowledge in the broader dimension of career education is apparent.

Finally, school psychology has attempted to serve all students, not just the handicapped and disadvantaged students. This service should continue to be provided from preschool through adult and continuing education.

Following this thinking, the commission concludes that the specialty in vocational school psychology be developed to serve secondary students and adults.

RECOMMENDATIONS

The National Association of School Psychologists makes the following three recommendations to school psychologists and school psychologist trainers as a beginning step toward improving preservice and inservice training in vocational school psychology:

1. Vocational school psychologist preservice and inservice trainers should collaborate with professionals in vocational-technical education, vocational rehabilitation, special education, and counselor education.
2. Vocational school psychologist preparation should train school psychologists for major leadership functions in the provision of vocational school psychological services for youth and adults.
3. School pyschologists should initiate research on their roles in vocational school psychology to provide documentation for program outcomes.

COMMISSION MEMBERS
James Agner
Kathleen T. Donohue
Thomas H. Hohenshil, Co-Chairperson
Thomas T. Jacobson
John W. Otey
Richard A. Pfeffer
Rutherford B. Porter
Joyce Smith
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The NASP National Committee on Vocational School Psychology was appointed in 1980 and 1981 to further the development and implementation of vocational school psychology. 1979 and 1980 also saw additional areas of practice proposed in the literature. One of these areas dealt with providing school psychological services for adults in various occupational training programs. The other dealt with the impact of work patterns upon family development and proposed several ways in which school psychologists can help parents facilitate their children's career development (Hohenshil, 1979; Hohenshil, Hummel & Maddy-Bernstein, 1980).

Currently, the popularity of vocational school psychology is reflected by the fact that states are beginning to devote statewide conferences to this theme. For example, Virginia Tech received a grant to conduct this inservice conference for 150 school psychologists. As you know, the purpose of the conference is to familiarize school psychologists with vocational programs for handicapped students, and the roles they can play in such programs. Topics for the conference include: (1) Vocational assessment procedures for the handicapped; (2) The development and implementation of the vocational IEP; (3) Vocational programs for handicapped students; (4) CETA programs for handicapped persons; (5) Training in vocational school psychology; (6) Career planning processes for handicapped students; (7) School psychology/Vocational education relationships; (8) Helping parents to help their handicapped child plan a career; and (9) Roles of school psychologists in occupational training programs for handicapped persons. Florida held a statewide conference in 1981 for trainers of school psychologists, counselor educators, and vocational educators which was designed to facilitate communication among these groups with the goal of improving career development programs for handicapped students. The states of South Carolina and Georgia also will devote their 1981 fall school psychology conventions to the topic of vocational school psychology. In addition, doctoral level programs with a vocational school psychology specialty have been developed cooperatively with Virginia Tech and James Madison University, and at Oklahoma State University. A number of other universities have also begun including a vocational component in the training program for *all* of their school psychology students.

This pretty well sums up the historical development and current status of the vocational school psychology movement. In a period of less than a decade it has moved from conceptualization to national visability and recognition. As noted by Fagan (1981) and others (Grimes, 1981; Trachtman, 1981), vocational school psychology appears to be one of the major frontiers of growth in the decade of the 1980's.

The Practice of Vocational School Psychology

The practice of school psychology in a vocational setting is not all that much different from practice in other settings. The basic functions are similar, but the clientele is different. However, it is clear that school psychologists must, in some ways, change the way they function and acquire new and expanded skills if they are to provide the kinds of services described as necessary by vocational educators and others who are involved in various types of career development programs. The following sets of direct and indirect services have been proposed:

Direct Services

The direct services provided by vocational school psychologists include individual and group assessment and diagnostic procedures, individual and group counseling, and referral services. The necessary assessment and diagnostic skills go beyond those traditionally performed by school psychologists. In addition to the traditional norm and criterion referenced instruments to evaluate mental functioning, achievement, personality, perception, and small motor coordination, psychologists working with occupational training programs also need knowledge and skills with vocational aptitude batteries, vocational interest inventories, career maturity measures, and such techniques as work sampling and job analysis. This is not to say that a school psychologist would be the one who actually administers all of these procedures. However, the psychologist practicing in vocational programs for handicapped youth must know enough about them to make accurate referrals to those who do.

Not only is it necessary to use the traditional techniques which attempt to predict success in "academically" oriented programs, but the vocational school psychologist needs the knowledge and skills to relate specific vocational aptitudes and interests to those required for success in a wide variety of vocational programs. To report that a student classifies in a certain range of mental ability and may or may not have the aptitude to succeed in traditional school subjects is not sufficient. The psychologist must be skilled enough to predict the probability of success in a wide range of vocational programs in an effort to place the student in an appropriate training program. This will require psychologists functioning in vocational settings to have expertise with vocational aptitude, interest, and career maturity measures as well as a comprehensive knowledge of the specific traits necessary for success in each vocational training program.

Although school psychologists would not normally administer all of these measures (work sampling, vocational aptitude and interest instruments, etc.), they should have the expertise to integrate and interpret the results in conjunction with data from a typical psychological evaluation. Although some might contend that this should be done by school counselors, the fact of the matter is that the vast majority of school counselors do not have the training or skills to work effectively with handicapped persons and even less preparation to provide services to handicapped students who might benefit from vocational education. Thus, the vocational aspects of a comprehensive psychological evaluation are gaining increasing importance.

In the area of individual and group counseling procedures, the vocational school psychologist may provide such services as work adjustment counseling in addition to other types of crisis oriented, personal-social counseling. Proficiency in developmental counseling, values clarification, and career decision making skills are also helpful when working with handicapped students in career development programs.

Referral services include the traditional referrals to various inschool and community agencies. They also include the development of close working relationships with vocational rehabilitation, employment services, special education, and the wide variety of vocational programs in which handicapped youth might be placed. Welfare, medical personnel, and parents are usually involved in the vocational decisions and vocational preparation of handicapped students. Close working relationships are also necessary in the business/labor/industrial/government community when placing and working with handicapped individuals in cooperative and work experience vocational programs (Fagan, 1981; Hohenshil, 1974; Hohenshil, Ryan & Warden, 1978; Kramer & Nagle, 1980; Medway, 1978; and Wallbrown, 1979).

Indirect Services

Indirect services are efforts to assist persons by working through significant others who may have more primary contact. Significant others might be vocational teachers, counselors, parents, employers, or other school or community personnel. There is a well documented need for inservice education for vocational teachers who serve handicapped students. The majority of these teachers have had little professional training to work with students with special learning needs. School psychologists can play a valuable inservice role by providing vocational teachers with knowledge of the learning and behavioral disabilities. The mastering of behavior management and instructional strategies proven effective with special needs students is also needed by vocational teachers. Symptom identification, mainstreaming techniques, and curriculum modification are all essential areas of consultation and inservice training that school psychologists functioning in a vocational setting might provide. Assistance in program evaluation and writing grants to initiate new vocational programs for the handicapped are other areas where vocational school psychologists can utilize their knowledge and skills.

The importance of indirect services cannot be overestimated, for the most frequent cause of vocational instructors' failure is not their lack of skill in the particular trade area, but rather their failure to take into consideration the learning an/or behavioral characteristics of the handicapped students being taught. The school psychologist can also provide valuable consultation services to vocational instructors who do not deal specifically with handicapped students. For example, in many trade and industrial education programs (carpentry, plumbing, auto mechanics, etc.), the primary criterion for teacher selection is demonstrated occupational competence in a specific trade area, rather than completion of a traditional teacher training program. Because the majority of these vocational teachers receive their education in the "school of hard knocks", many are not graduates of teacher training institutions and thus are not knowledgeable of contemporary educational practices and behavior management techniques. Inservice training and consultation in these areas would assist vocational educators a great deal (Hohenshil, Hummel & Maddy-Bernstein, 1980; Hohenshil & Warden, 1978; Smith, 1978; Telzrow, 1975).

As one can surmise from the above the actual services provided by psychologists practicing in vocational settings are not all that much different than those traditionally provided by school psychologists (assessment, diagnosis, counseling, consultation, and inservice education). What is different is the clientele (adolescents and young adults) and program content (vocational and career development programs).

Preparation in Vocational School Psychology

The kinds of roles and functions proposed for vocational school psychologists do require changes in traditional school psychology training programs. Although Bruner, Super, and others have seen career development as a critical aspect of general human development, as of this writing not a single state in the nation requires significant coursework in career development theory, vocational education, or career education for certification in school psychology. Compounding this, even the professional standards proposed by NASP in the 1977 special issue of *The School Psychology Digest* do not include a single reference to the necessity for knowledge or skills in vocational education. However, it is just as important for the school psychologist functioning in the vocational setting to have expertise in such programs as it is for the psychologist functioning in a special education setting to have extensive knowledge and skills in special education programming. In fact, it is necessary for the vocational school psychologist to have skills in *both* areas.

A wide variety of vocational education programs are offered by most public schools, each requiring specialized instructional techniques on the part of the teacher as well as a specific set of aptitudes for success on the part of students. To function effectively in vocational settings, school psychologists must have a thorough knowledge of these programs and the types of aptitudes, interests, and skills required for each. The effective school psychologist must be able to couple this information with knowledge of human development and the learning processes of both typical and atypical students. Armed with this knowledge and knowledge of vocational assessment procedures, the school psychologist is an extremely valuable consultant to vocational teachers in the design of appropriate vocational and career education programs, selection of students, and inservice training and consultation regarding student management and learning styles (Fagan & Hohenshil, 1976). Hohenshil and Warden (1978) proposed that vocational school psychologists possess the following comprehensive set of competency domains:

1. **Career and human development theory and research,** and the skills necessary to translate this knowledge into developmental vocational, special, and career education programs.
2. **Vocational education programs** (regular, handicapped, and disadvantaged), and the skills necessary to assist in program development and modification, student selection, behavior management, instruction, and placement.
3. **Special education programs,** and the skills necessary to assist in program development, student selection, behavioral management, instruction, and placement.
4. **Career education,** and the skills necessary to assist in the development and implementation of self and career awareness, orientation and exploration, and preparation, placement and follow-up programs.
5. **Consultation strategies,** and the skills necessary to assist students by working through others (teachers, counselors, parents, administrators, peers, etc.).
6. **Inservice education techniques,** and the skills necessary to develop, implement, and evaluate such programs on a variety of topics for faculty.
7. **Individual and group assessment strategies,** and the skills necessary to develop or select, administer, and interpret a variety of instruments, and translate the resulting data into appropriate educational, decision-making, and behavior management programs (mental ability, aptitude, interest, career maturity, work sampling, behavioral observation, achievement personality).
8. **Individual and group counseling practices,** and the skills necessary to assist individuals in career, educational, and personal planning and problem-solving.
9. **Decision-making processes,** and the skills necessary to develop and implement programs designed to teach and facilitate career, educational, and personal decision-making.
10. **Behavior management techniques,** and the skills necessary to implement these programs through teachers and parents.
11. **Special instructional methodologies,** and the skills necessary to select and recommend them for appropriate individuals and groups (regular, handicapped, disadvantaged).

12. **The unique educational and career development needs of special groups** (women, minorities, handicapped, disadvantaged, adults, etc.) and the skills necessary to assist them in their development.
13. **Sexism and racism,** and the necessary skills to reduce institutional discrimination in order to broaden the career, educational, and social opportunities for all students.
14. **Community resources,** and the skills necessary to make appropriate referrals and act as liaison between the school and referral agencies.
15. **Research and program evaluation,** and the skills necessary to acquire evidence of the effectiveness of vocational, special, and career education programs.
16. **Educational trends and state and federal legislation** which may influence the development of vocational, special, and career education programs.
17. **The role and function** of the vocational school psychologist.

Potential Employment Settings

There are a variety of settings which are appropriate for the employment of vocational school psychologists. Following are several of these settings:

- Vocational Technical Schools
- Comprehensive High Schools
- Regional Education Service Centers
- State Departments of Education
  - Division of Vocational Education
  - Division of Pupil Personnel Service
  - Division of Special Education
  - Division of Rehabilitation Services
  - Division of Metal Health and Retardation
- University School Psychology Training Programs
- University Counselor Education Programs
- University Vocational Teacher Education Programs
- University Special Education Teacher Training Programs
- Community Colleges
- Private Practice
- Private Counsulting Firms
- Private Schools

The ultimate criterion for success of vocational school psychologists will be their employment record in suitable settings servicing vocational technical education, special education and other areas which deal with the occupational education of both handicapped and non-handicapped students. As vocational school psychologists demonstrate that they can provide the diagnostic, inservice, and consultation services needed in occupational training programs. employment will be one of the least of the profession's problems. In addition, generalists in school psychology who also acquire skills in vocational areas will be much more valuable to their clients as well as their employers.

The Future

It is clear that not all school psychologists will or should become vocational school psychology specialists. However, it is equally clear that school psychologists cannot function effectively at the secondary level unless they are knowledgeable about vocational education opportunities and the career development needs of handicapped students. It is anticipated that there will be a cadre of specialists specifically trained to function in vocational settings. This is already occurring in doctoral programs offered cooperatively by Virginia Tech and James Madison University, and by Oklahoma State University. It is also anticipated in the future that *all* school psychologists will have some vocational knowledge and skill competencies included in their pre and inservice training programs. One of the greatest challenges to professional organizations during the decade of the 1980's will be how to devise and deliver continuing professional development programs to enable all school psychologists to provide expanded services at the secondary level. For those psychologists wishing to specialize in vocational school psychology, the opportunities for rewarding employment in a variety of areas are promising. The potential is clearly there for growth during the 1980's.

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APPENDIX B

Conference Program

Secondary School Psychological Services: *Focus on Vocational Assessment Procedures for Handicapped Students*

May 5, 1982
Donaldson Brown Center for Continuing Education
College of Education
Virginia Tech

Purpose of Conference

The purpose of this conference is to provide school psychologists with knowledge and skills in vocational assessment procedures for handicapped secondary students.

Sponsored by

Virginia Tech, in cooperation with the Virginia Department of Education, the Virginia Association of School Psychologists, and the NASP National Committee on Vocational School Psychology.

SECONDARY SCHOOL PSYCHOLOGICAL SERVICES: FOCUS ON VOCATIONAL ASSESSMENT PROCEDURES FOR HANDICAPPED STUDENTS

May 5, 1982

Donaldson Brown Center for Continuing Education
Virginia Tech

6:00-8:00 p.m. **Conference Registration** (May 4, 1982)
(Main Lobby)

8:00-9:30 a.m. **Conference Registration** (May 5, 1982)
(Main Lobby)

9:30-10:00 a.m. **Introduction to Conference**
(Auditorium)

10:00-10:45 a.m. ***Role of Vocational Assessment in Secondary School Psychological Services***
(Auditorium)
Dr. Thomas H. Hohenshil, Chairperson
NASP National Committee on Vocational School Psychology
Professor, Virginia Tech

11:00-12:00 **Concurrent Special Interest Groups**

—Vocational Assessment Procedures for **Mentally Retarded** Students
(Front Auditorium)
Dr. Douglas Brown
Dr. Harriet Cobb
James Madison University

—Vocational Assessment Procedures for **Learning Disabled & Emotionally** Handicapped Students
(Back Auditorium)
Mrs. Lillien Brown
Licensed School Psychologist
Roanoke, Virginia
Mr. Donald Tellefson
School Psychologist (Wisconsin)
Virginia Tech

—Vocational Assessment Procedures for **Visually & Auditorially** Handicapped Students
(Conference Room F-1)
Mr. Brett Blevins
School Psychologist
Waynesboro Public Schools (Virginia)
Mr. David Kirk
School Psychologist
Henry County Schools (Virginia)

—Vocational Assessment Procedures for **Orthopedically** Handicapped Students
(Conference Room F-2)
Dr. Kenneth Sheldon
School Psychologist
Woodrow Wilson Rehabilitation Center (Virginia)
Ms. Laurie DuBose
Work Evaluation and Occupational Therapist
Woodrow Wilson Rehabilitation Center (Virginia)

—Vocational Assessment Procedures for Handicapped **Blacks**
(Conference Room A)
Ms. Edith Kelsey
School Psychologist (Georgia)
Virginia Tech

—Vocational Assessment Procedures for **Elementary** and **Middle** School Students
(Conference Room B)
Mr. David Solly
School Psychologist
Monroe County Schools (West Virginia)

—School Psychologists in a **Community College** Vocational Assessment Center
(Committee Room)
Ms. Ellan Dodson
Ms. Millie Turrentine-Jenkins
New River Community College

—Vocational **Aptitude** & Vocational **Interest** Assessment Procedures for Handicapped Students
(Conference Room C)
Mr. Tommy Barber
School Psychologist
Galax Public Schools (Virginia)
Mr. Tucker Anderson
School Psychologist (West Virginia)
Virginia Tech

—**Social/Adaptive** Behavior Assessment Procedures for Handicapped Students
(Conference Room G-1)
Mr. Fred Capps
School Psychologist (Virginia)
Virginia Tech
Mr. Keith Houff
School Psychologist (Virginia)
Virginia Tech

—**Cooperative Planning of Vocational Evaluation Programs**
(Conference Room G-2)
Dr. Pat Poplin
Special Education Supervisor
Virginia Department of Education

—Integrating Vocational Assessment Data into **Psychological Reports**
(North Lounge)
Mr. Edward Levinson
School Psychologist
Prince Edward County Schools (Virginia)
Mr. John Shepard (Virginia)
Mr. Alan Johnson (Connecticut)
Schools Psychologists
Virginia Tech

12:00-1:00 **Luncheon**
(Main Dining Room)

1:05-2:00 **Repeat of Concurrent Special Interest Groups**

2:05-3:05 **Repeat of Concurrent Special Interest Groups**

3:10-4:10 **Repeat of Concurrent Special Interest Groups**

4:20-5:00 **Panel Discussion** (Main Auditorium)
Roles of School Psychologists, Teachers, Counselors, Administrators, and others in the vocational Assessment Process (Members to be announced)

5:30-6:30 **Attitude Adjustment Hour**
(Main Dining Room)

6:30-8:00 **Banquet**
(Main Dining Room)

Banquet Speaker:
TRENDS IN SCHOOL PSYCHOLOGY
RELATING TO SECONDARY SCHOOLS
Dr. John Guidubaldi, President
National Association of School Psychologists
Kent State University

ACKNOWLEDGMENTS

Conference Advisory Committee

Wm. Tucker Anderson
Harriet Cobb
Thomas H. Hohenshil, Chairperson
John W. Shepard
Richard Sidebottom

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APPENDIX C

Vocational Assessment for Handicapped Persons (An Annotated Bibliography)

VOCATIONAL ASSESSMENT FOR HANDICAPPED PERSONS
(Annotated Bibliography)

Developed By:

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ABRAMS, M. A new work sample battery for vocational assessment of the disadvantaged: VITAS. *Vocational Guidance Quarterly*, 1979, *28*, 35-43. (ERIC Document Reproduction Service No. EJ215671).

Describe the development of a work sample battery designed for assessment of vocational aptitudes, interests, and temperament in a disadvantaged client population. VITAS provides information about factors most related to success on the job: interest on the job, temperament for the job, and aptitudes for physical and cognitive components of the job.

ALCORN, C., & NICHOLSON, C. A vocational assessment battery for the educable mentally retarded and low literate. *Education and Training of the Mentally Retarded*, 1975, *10*(2), 78-83.

This article describes the development of a vocational assessment battery geared to the special needs of the retarded (e.g., low reading level, short attention span, and difficulty in following instructions). The following tests are considered useful:

1. WISC-R or WAIS
2. Ravens Progressive Matrices
3. Wide Range Achievement Test
4. Bennett Mechanical Comprehension Test - on tape
5. Slosson Drawing Coordination Test
6. Differential Aptitude Tests: Clerical
7. Purdue Pegboard
8. Stromberg Test of Manual Dexterity
9. California Picture Interest Inventory
10. 16 PF - on tape
11. Bender Gestalt
12. MMPI - with selected clients

ANATASI, A. *Psychological testing (4th ed.).* New York: Macmillan, 1976.

Vocational tests are discussed in various parts of this book from several viewpoints. Chapter 15 examines occupational tests, chapter 17 examines self report inventories, and chapter 13 examines aptitude batteries.

ANDERSON, W. T. Assessment roles of vocational school psychologists. *The Journal for Vocational Special Needs Education*, 1982, *4*(3), 14-17.

This article describes comprehensive psycho-educational-vocational evaluations. Included are discussions of interest measures, performance tests, work samples, and work experiences as assessment devices. The article goes on to describe how this information can be integrated into school psychologists' psycho-educational assessments and reports.

ANDERSON, W. T. Vocational interest assessment procedures. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

This paper explores the uses and methods of interest assessment. Several reading and non-reading instruments are compared and guidelines given for test selection.

ANDRULIS, R. S. *Adult assessment.* Springfield, IL: Charles C. Thomas, 1977.

This book of adult assessment describes and evaluates a wide range of instruments for sampling adult behavior. Chapter 6 is devoted to interest and vocational tests.

BACKER, T. E. *Client assessment: A manual for employment and training agencies. Volume 1: Introduction to assessment program development.* Princeton, N.J.: ERIC Clearinghouse on Tests, Measurement, and Evaluation, 1979, (ERIC Document Reproduction Service No. ED186485).

To comply with the Comprehensive Employment Training Act (CETA) and with explicit federal guidelines for equal employment opportunity, local employment and training agencies funded by CETA need to develop client assessment programs. This volume and its companion are designed for this purpose. Five original program descriptions, and findings from large-scale surveys by Mark Battle Associates and A. L. Nellum and Associates are discussed to identify current practices, problems, and possible solutions. Both surveys indicated current practices, problems, and possible solutions. Both surveys indicated that the General Aptitude Test Battery was the most widely used instrument. A major problem is the lack of validated instruments for the typically disadvantaged client; the GATB is no exception. To anticipate problems or evaluate existing programs, a conceptual model of assessment and checklist for planning in-house or subcontracted programs are presented. (The appendix describes relevant reference works and information systems).

BACKER, T. E. *Client assessment: A manual for employment and training agencies. Volume 2: Assessment techniques.* Princeton, N.J.: ERIC Clearinghouse on Tests, Measurement, and Evaluation, 1979, (ERIC Document Reproduction Service No. ED186486).

Several standard measures of aptitude, interest, attitude, and personality are briefly described, including the General Aptitude Test Battery, the Clerical Skills Tests, other tests sponsored by the United States Employment Service, and the Strong Campbell Interest Inventory. This volume also reviews special assessment techniques for the severely disadvantaged including 19 paper and pencil measures, 13 work sample systems, and two pretesting orientation exercises. Each review outlines format purpose, development, intended audience, norms, validity, reliability, application to an employment and training setting, and availability. Some tests, like the Nonreading Aptitude Test Battery and the Basic Occupational Literacy Test, have been extensively normed and validated with disadvantaged populations; others have not involved this group at all.

BARBER, R. M. U.S. Employment Service's aptitude testing batteries and the handicapped student. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

This article describes the GAT-B and NAT-B and their use with handicapped secondary students. Also included is a discussion of Occupational Aptitude Patterns. A rationale is given for the use of these devices in a comprehensive vocational evaluation.

BARTON, E. H., Jr. Vocational evaluation and work adjustment: Vocational development companions. *Journal of Rehabilitation*, 1970, *36*(1), 35-37.

According to this author, vocational evaluation primarily focuses on assessing client behavior while work adjustment primarily focuses on changing client behavior. These services interact to provide clients with a growth experience in which he or she can (1) discover vocational interests, abilities and identifies and (2) acquire adaptive work habits.

BELLAMY, G. T., O'CONNER, G., & KARAN, O. C (Eds.). *Vocational rehabilitation of severely handicapped persons.* Baltimore: University Park Press, 1979.

This collection of readings provides an overview of current efforts to include severely handicapped adults in the occupational mainstream of community life.

BINGHAM, G. Exploratory process in career development: Implications for learning disabled students. *Career Development for Exceptional Individuals*, 1981, *4*, 77-80.

This article discusses exploration as a central construct of career development theories for normal individuals and the possible influences of learning disabilities on the process. Specifically, the author discusses cognitively based factors important to career exploration.

BITTER, J. A., & BOLANOVICH, D. J. WARF: A scale for measuring job-readiness behaviors. *American Journal of Mental Deficiency*, 1970, *74*, 616-621.

The present article describes the Work Adjustment Rating Form (WARF) relative to the criteria of a) systematic observation, b) relevance, c) reliability of observations and d) identification of behavior patterns. The main shortcoming of the scale is its reliance on judgement as the criteria of work adjustment as opposed to verifiable behavior observations.

BLEVINS, B. A. Vocational assessment procedures for the deaf and hearing impaired. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

This article described characteristics of deaf and hard of hearing individuals which interfere with vocational and career development. Recommendations are made for components of vocational evaluations.

BOLTON, B. (Ed.). *Handbook on measurement and evaluation in rehabilitation.* Baltimore, MD: University Park Press, 1976. (Available from: University Park Press, Chamber of Commerce Building, Baltimore, Maryland 21202).

The chapters in this book are written by authorities in psychometrics, clinical assessment, and counselor education. The first section presents basic principles of testing and reviews scores and norms, reliability, and validity. The second section covers principal testing instruments, including aptitude, achievement and intelligence tests; personality and psychopathology inventories; projective techniques; and vocational inventories. The final section describes application in rehabilitation; vocational evaluation; the USES testing program; client outcomes; work adjustment; blind, deaf, and mentally retarded adult clients; and assessment of client performance.

BOTTERBUSCH, K. *A comparison of four vocational evaluation systems.* Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1977.

The purpose of this publication, which covers the COATS, Hester, Micro-Tower, and VIEWS, is to present an objective comparison of these vocational evaluation systems. Manuals, technical reports, and related publications were used to obtain information about each system. Comparison points include information about the developer, organization of the system, process followed, administration procedures, scoring and norms, client observation, reporting, purposes, training required, and technical considerations. Also included are sections on considerations in the selection of a commercial vocational evaluation system, reviewer's comments, developer's address, current costs, and references.

BOTTERBUSCH, K. *A comparison of seven vocational evaluation systems.* Menomonie, Wisconsin: Univeristy of Wisconsin -Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1976.

The purpose of this publication is to compare seven commercially available vocational evaluation systems - the Tower System, Philadelphia JEVS Work Sample System, Singer Vocational Evaluation System, Talent Assessment Programs, Wide Range Employment Sample Test, McCarron-Dial Evaluation System, and the Valpar Component Work Samples.

BOTTERBUSCH, K. *Psychological testing in vocational evaluation.* Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1978.

The purpose of this publication is to help the evaluator wisely select and use tests within the context of the referral questions and the individualized evaluation plan. Part I contains information to why tests are used in evaluation, problems with tests, and how to select tests. Part II is a careful review of specific tests that either have been found to be successful within vocational evaluation or have this potential. Also included is a list of books on testing and statistics. Part II uses the same format, and may be considered as a revision of the 1973 MCD publication, *Tests and Measurements for Vocational Evaluators* (no longer available from MDC).

BOTTERBUSCH, K. *The use of psychological tests with individuals who are severely disabled.* Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1976.

The publication is intended to provide vocational evaluators and other professionals involved in assessing disabled persons with practical guidelines for selecting, adapting, and administering standardized psychological tests to individuals who have sight, hearing, and academic handicaps. Part I describes ways of selecting and modifying tests for the above disability groups. Part II describes tests commonly used in vocational evaluation and offers suggestions for selection, modification, and use. Part III briefly describes some tests specially designed for the severely disabled.

BROWN, D. T., & COBB, H. Vocational assessment procedures for the mentally retarded. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

This paper describes characteristics of mentally retarded clients which interfere with adequate vocational adjustment. Recommendations are made for techniques comprising comprehensive vocational evaluations.

BROWN, L. Vocational assessment for learning disabled students. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

Characteristics of learning disabled students which hamper vocational development are described in this article. Specific recommendations are made for the gathering of assessment data.

BRUGNOLI, G. A., CAMPION, J. E., & BASEN, J. A. Racial bias in the use of work samples for personnel selection. *Journal of Applied Psychology*, 1979, *54*(2), 119-123.

The findings of this study indicate that careful work sample development procedures and explicit instructions for behavioral observation minimize bias in ratings.

BUDDENHAGAN, R. G. Clinical assessment, human ecology, and social responsiveness in vocational rehabilitation. In W. A. Pruitt (Ed.), *Readings in work evaluation - I.* Menomonie, Wisconsin: Materials Development Center, Institute for Vocational Rehabilitation, University of Wisconsin - Stout, 1970, 7-12.

This author takes a critical view of rehabilitation assessment as exemplified by traditional (e.g., paper and pencil) psychological methods. Arguments are presented which question the value of psychological testing and, instead, favor work oriented evaluation procedures.

CAPPS, C. F. The measurements of adaptive behavior in public secondary schools: The school psychologist's role. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for the handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

The importance of adaptive behavior for secondary school students is discussed in this paper. Suggestions are made to facilitate school psychologist's evaluation of this variable at the secondary level.

COBB, R. B. Vocational assessment of the special needs learner: The utility of commercial work sampling system. *The Journal for Vocational Special Needs Education, 1981, 3*(3), 30-32.

This author presents a discussion of the utility of commercial work sample systems in the assessment of interests, achievement, and aptitudes in the public schools. The author suggest that school systems need to compare their goals and needs to the expenses and limitations of commercial systems.

CLEMENS, D. B. A user's guide to vocational interest inventories. *The School Guidance Worker*, 1980, *35*(4), 28-32.

The author of this article recommends that the counselor should personally take tests which he or she intends to give to students. Major interest inventories are reviewed in an effort to aid in selection.

COHEN, C., & DRUGO, J. Test-retest reliability of the Singer Vocational Evaluation System, *The Vocational Guidance Quarterly*, 1976, *24*, 267-270.

This study reports that the test-retest reliability of the Singer Vocational Evaluation System is moderate (stability coefficients .61 - .71) for an Educable Mentally Retarded population.

Comprehensive Occupational Assessment and Training System. Prep, Inc. 1575 Parkway Ave., Trenton, N.J. 08628.

The COATS system uses ten work samples based on the content analysis of job groups. The job groups selected were chosen from the U.S. Office of Education's growth rate projections.

CORY, C. H. Utility of computerized versus paper-and-pencil tests for predicting job performance. *Applied Psychological Measurement*, 1977, *1*, 551-564. (ERIC Document Reproduction Service No. EJ188014).

This article presents predictive validity data for on-job performance for a set of computerized Graphic and Interactive Processing (GRIP) tests in conjunction with data for both experimental paper-and-pencil and operational tests. Validity coefficients for job element and global criteria are reported for four different jobs.

COTTLE, W. C. Interest and personality inventories. *Guidance Monograph Series*, New York: Houghton Mifflin Company, 1968.

The purpose of this monograph is to explore general, basic information about personality and interest inventories. Selected instruments are reviewed.

CRONBACH, L. J. *Essentials of psychological testing* (3rd ed.). New York: Harper and Row, 1970.

This book discusses several types of vocational assessment instruments. Chapter seven looks at ability tests, chapter 13 examines personnel selection, and chapter 14 discusses interest inventories.

CROSS, J. E., & PINE, A. L. The application of experimental behavior analysis in vocational training for the severely handicapped. In G. T. Bellamy, G. O'Conner and O. C. Karan (Eds.), *Vocational rehabilitation of severely handicapped persons*. Baltimore: University Park Press, 1979.

This chapter describes a research methodology that addresses questions in the analysis and acquisition of vocational behaviors in severely retarded adolescents and adults.

CULL, J. G. & HARDY, R. E. (Eds.). *Vocational rehabilitation: Profession and process*. Springfield, IL: Charles C. Thomas, 1972.

Part Three of this book examines various areas of vocational rehabilitation including evaluation.

DICKSON, M. *Work sample evaluation of blind clients: Criteria for administration and development*. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1976.

The purpose of this study is to define and present a useable set of criteria for vocational evaluators working with blind clients and the use of work samples as one means of determining their vocational potential. Included is a rationale for the use of work samples, specific steps for adminstration and scoring, the use of norms, a review of the literature, and suggested modifications for the Philadelphia JEVS Work Sample Battery, the Singer Vocational Evaluation System, and the VALPAR Component Work Sample Series.

DITTY, J. A., & REYNOLDS, K. Traditional vocational evaluation: Help or hinderance. *Journal of Rehabilitation*, 1980, *46*(4), 22-25.

This study found that standardized vocational evaluations are used more as a method to screen clients out of various occupations than as an aid to vocational choice.

DODSON, E., & TURRENTINE-JENKINS, M. School psychologists in a community college vocational assessment center. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article describes the role of school psychologists in community college vocational evaluation center. Also presented is an overview of the assessment program.

DRUGO, J., & COHEN, C. Utilization of the RFVII with an EMR population. *Mental Retardation*, 1977, *15*(3), 46-47.

This article described the use of the Ohio Vocational Interest Survey (OVIS) with ninth grade mainstreamed EMR students. The OVIS was found to be valid yet impratical. The Reading Free Interest Inventory (RFII) was found to be more useful with EMR students; it is not recommended for use with TMR students.

ELLSWORTH, S., & NOLL, A. *Vocational evaluators in school settings: Task analyses, certification, qualification and status data*. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, 1978.

This consolidated report consists of two separate research papers. The first, entitled, "A survey of the roles and functions of vocational evaluators in vocational educations," reports the roles and functions of vocational evaluators in the placement of special needs students into vocational education programs in secondary and post-secondary schools throughout the United States. The second paper, "A survey of the certification and qualifications of vocational evaluators employed in vocational education," reports on the certification status, qualifications, and training of vocational evaluators employed in vocational education settings. Also investigated was the relationship between requirements and training.

ESSER, T. *Effective report writing in vocational evaluation and work adjustment programs*. Menomonie, Wisconsin: University of Wisconsin - Stout, Department of Rehabilitation and Manpower Services, Materials Development Center, 1975.

This publication is designed to provide general principles of content and style for evaluation and adjustment reports.

FAIR, G. W., & SULLIVAN, A. T. Career opportunities for culturally diverse handicapped youth. *Exceptional Children*, 1980, *46*, 626-631.

This article first provides an overview of the employment situation for minority individuals and its implications for career and vocational education of culturally diverse handicapped youth. Second, the article addresses the enigma of being a member of a doubly stigmatized population.

FIELD, T., & SINK, J., & COOK, C. The effects of age, I.Q., and disability on performance on the JEVS system. *Vocational Evaluation and Work Adjustment Bulletin*, 1978, *11*(3), 14-22.

This study was designed to determine the value of the Revised BETA intelligence quotient in predicting success on timed work samples from the JEVS Work Sample System.

FINLEY, J. R. The psychologist consultant's role in the state vocational rehabilitation agency. *Journal of Rehabilitation*, 1979, *45*(1), 46-47.

This article reports the use of psychologists as consultants to local rehabilitation offices in Arizona. Responsibilites and roles of psychologists include assessment, interpretation, referral, and coordination.

FRY, R. *Training program in work evaluation, adjustment, and rehabilitation administration*. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1978.

Contains a brief listing of agencies and institutions which provide degree or short-term training in vocational evaluation, adjustement services, and rehabilitation administration (primarily administration in rehabilitation facilities). Titles and descriptions of coursework, time required, certificates or degrees offered, and contact persons are included.

FRY, R. (Ed.). *Work evaluation and adjustment: An annotated bibliography, 1947-1977*. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1978.

Since 1970 the Materials Development Center has published eight annual annotated bibliographies on the literature in vocational (work) evaluation and adjustment. All entries from the previous bibliographies have been combined into this publication. The bibliography contains 1,296 annotations covering the years from 1947 through 1977.

GANNAWAY, T. W., & SINK, J. M. A summary of research relating to the use of an audiovisual instruction based work sample program with educable mentally retarded students. *The Journal for Vocational Special Needs Education*, 1981, 5(5), 24-26.

This article summarizes research relating to the use of Singer's Vocational Evaluation System with mentally retarded students. It includes discussions of reading levels, reliability, and validity.

GANNAWAY, T. W., & SINK, J. M. The relationship between the Vocational Evaluation System by Singer and employment success in occupational groups. *Vocational Evaluation and Work Adjustement Bulletin*, 1978, *11*(2), 38.

This article discusses the vocational evaluation system published by Singer in relation to specific occupational groups.

GANNAWAY, T. W., & SINK, J. M., & BECKET, W. C. A predictive validity study of a job sample program with handicapped and disadvantaged individuals. *The Vocational Guidance Quarterly*, 1980, *29*, 4-11.

This study was a longitudinal, experimental group only, criterion related study to determine the predictive validity of the Singer Vocational Evaluation System with disadvantaged and handicapped populations.

GELLMAN, W., & SOLOFF, A. Vocational evaluation. In B. Bolton (Ed.), *Handbook of measurement and evaluation in rehabilitation*. Baltimore: University Park Press, 1976.

This chapter discusses the theories and goals of vocational evaluation.

GIBSON, J., & LAZAR, A. L. Orange Unified School District's special education career and vocational program. *Career Education Quarterly*, 1977, 2(4), 21-28.

This article describes a program designed to meet career/vocational components of IEP's required under P.L. 93-380 and P.L. 94-142. The high school component used the following tests in an evaluation battery:

1. Micro-TOWER evaluation system
2. Comprehensive Career Assessment Scale
3. Social and Pre-vocational Information Battery
4. Stromberg Dexterity Test
5. Crawford's Small Parts Dexterity Test
6. Hand Tool Dexterity Test
7. Minnesota Rate of Manipulation Test
8. Picture Interest Exploratory Survey
9. General Aptitude Test Battery
10. Becker (AAMD) Reading Free Vocational Interest Inventory

This article further describes the role of the career specialist and student benefits.

GILLS, W. S. The psychologist and rehabilitation. In J. G. Cull and R. E. Hardy (Eds.), *vocational rehabilitation: Profession and process*. Springfield, IL: Charles C. Thomas, 1972.

This chapter discusses the psychologist as a rehabilitation specialist, the traditional role of the psychologist in the rehabilitation program and the contents of the psychological evaluation.

GRISAFE, J. P. *Occupational assessment handbook*. Riverside, CA: Riverside County Superintendent of Schools, n. d. (ERIC Document Reproduction Service No. ED187879).

This handbook contains suggested guidelines for planning for implementing an occupational assessment program and an overview of fifty-one occupational assessment instruments. The guidelines cover these topics: instrument selection and use, administration, scoring, and interpretation. Each of the reviews of occupational interest and ability assessment instruments contain the following information in a one-page format: reference number, title, copyright, vendor, type/use of instrument, target populations, instrument format, scoring, interpretive format, reading level, administration time, and space for notes. For quick reference, a chart identifying the major factors of the reviews—type, target population, scoring, reading level, and administrative time—and a list of the vendors are included at the back of the document.

GUIDUBALDI, J. The secondary school psychologist: Advice for an evolving specialty in a changing society. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for the handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

The author of this article begins by describing the criteria for needed specialization in the field of school psychology. The article goes on to build the case for the study of socialization processes as a means to improve the educational process.

GUIDUBALDI, J., KEHLE, T. J., & MURRAY, J. N. Assessment strategies for the handicapped. *The Personnel and Guidance Journal*, 1979, *58*, 245-251.

This article covers a wide variety of assessment strategies including perceptual motor, self help and work potential skill areas.

HALPERN, A. S. Principles and practices of measurement in career education for handicapped students. *Career Development for Exceptional Individuals*, 1978, *1*, 13-24.

The present article reviews the concepts for career development relating to the handicapped. Principles and practices of measurement are discussed.

HALPERN, A. S., & RAFFELD, P., IRVIN, L. K. & LINK, R. Measuring social and prevocational awareness in mildly retarded adolescents. *American Journal of Mental Deficiency*, 1975, *80*, 81-89.

The Social and Prevocational Information Battery contains nine subtests which sample social and prevocational awareness. It was developed and normed on secondary EMR students in Oregon.

HARMAN, L. W., SHARMA, V., & TROTTER, A. B. Vocational inventories. In B. Bolton (Ed.), *Handbook of measurement and evaluation in rehabilitation*. Baltimore: University Park Press, 1976.

This chapter discusses vocational interest and attitude inventories and the counseling process for disabled clients.

HOFFMAN, P. R. an overview of work evaluation. *Journal of Rehabilitation*, 1970, *36*(1), 16-18.

This article overviews factors such as definitions and concepts, historical backgrounds and work trends as they relate to vocational evaluation.

HOFFMAN, P. R. Work evaluation: An overview. In J. G. Cull & R. E. Hardy (Eds.), *Vocational rehabilitation: Profession and process*. Springfield, IL: Charles C. Thomas, 1972.

This chapter discusses the theory, methodology, and utilization of work evaluation in rehabilitation.

HOUFF, J. K. Occupational social competence/skills: A necessary component of vocational assessment for school psychologists. In T. H. Hohenshil and W. T. Anderson (Eds.). *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech 1982.

This article presents a rationale for the inclusion of social competence in vocational assessment. Assessment procedures with empirical support and practical utility for remediation are suggested.

IRVIN, L. K., & HALPERN, A. S. A process model of diagnostic assessment. In G. T. Bellamy, G. O'Conner & O. C. Karan (Eds.), *Vocational rehabilitation of severely handicapped persons*. Baltimore: University Park Press, 1979.

The purpose of this chapter is to review the nature of diagnostic assessment practice in regards to rehabilitation and the retarded, to examine diagnostic assessment utility, and to propose an alternative model.

JACKSON, R. Appraising individual talents in schools and colleges. *The Vocational Aspects of Education*, 1976, *28*, 97-103.

The present article reports the results of a limited survey which examined the use of certain tests in counseling.

Jewish Employment and Vocational Services Work Sample Battery - Revised. Vocational Research Institute, JEVS, 1624 Locust St., Philadelphia, PA. 19103.

The JEVS battery utilizes 28 work samples to evaluate the client across ten worker trait groups found in the DOT. The system was normed on 332 young black males.

JOHNSON, D. R. Project Explore - a vocational assessment model for youth with special needs. *Career Development for Exceptional Individuals*, 1979, *2*, 40-47.

This article presents a model for a six week, half day program that provides special needs students with a variety of career exploration and vocational assessment experiences (e.g., work samples, special projects, simulations, and achievement and dexterity testing).

KELSEY, E. F. Vocational assessment procedures for handicapped blacks. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article describes influences which impact on the vocational and career development of blacks. Recommendations are made for examiners when testing members of this group.

KIRK, D. Vocational assessment of the visually impaired at the secondary level. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article describes how visual impairment relates to career and vocational development. A vocational assessment battery useful to school psychologists is suggested.

KRANTZ, G. D. Vocational evaluation in the public schools. In W. A. Pruitt (Ed.), *Readings in work evaluation I*. Menomonie, Wisconsin: Materials Development Center, Institute for Vocational Rehabilitation. University of Wisconsin - Stout, 1970, 13-24.

Krantz overviews problems and practices of vocational evaluation in public school settings. Reporting of results of projects, current issues and model descriptions are included.

KOLK, C. J. V. Assessment practices with the visually impaired. *Journal of Rehabilitation*, 1981, *47*(2), 22-27.

This survey of 65 rehabilitation agencies for the blind reports that one-third contract for assessment services. Also reported are the intelligence, achievement, aptitude, and personality tests most frequently used along with advantages and disadvantaged of each.

LEITCH, C. Career development and testing. *The School Guidance Worker*, 1979, *34*(4), 25-27.

The author of the present article recommends the Strong Campbell Interest Inventory, the Kuder DD Occupational Interest Survey and the Self Directed Search for providing students with lists of occupations to investigate.

LEITER, M. Behavioral observations for work situations: Revision for group observation. In G. Bellamy (Ed.), *Habilitation of severely and profoundly retarded adults*. Eugene, Oregon: University of Oregon, Center on Human Development, Rehabilitation Research and Training Center in Mental Retardation, 1976, 119-125.

The code developed by Todd, Bellamy, and Leiter (1975), provides extensive information on the behavior of a single worker and the events in the work environment. However, it is less useful for observing a group of subjects, and a second code was needed to record more general information about all workers in a given production setting. Using the code described here, a group of sixteen workers and trainers can be recorded. The group code is built about the same parameters as the individual code, and meets the same requirements for unobtrusive observations in a natural environment.

LESHNER, S. S. The relationship of work evaluation to work adjustment training. *Journal of Rehabilitation*, 1970, *36*(10), 32-34.

The core relationship is based on the fact that work adjustment training by operation, if not by definition, is a controlled work activity incorporating and modified according to continuous and progressive work evaluation.

LEVINSON, E. M., & SHEPARD, J. W. Integrating vocational assessment data into school psychological evaluations. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article briefly overviews career development needs and tasks of students and describes how traditional interpretations of psycho-educational results can be altered to provide vocationally relevant information. An outline is provided to guide in the information collection and writing of vocational reports.

LOERA, P. Vocational evaluation at a residential school for the deaf. [illegible] *ar-Spective*, 1977, *2*(3), 5-7.

Describes a vocational evaluation program at the residential school for the deaf. Use of the Valpar Component Work Sample System is detailed and suggestions for working with this population are included.

LUNNEBORG, P. W. The vocational interest inventory: Development and validation. *Educational and Psychological Measurement*, 1979, *39*, [illegible]5-451.

The present article describes a forced choice interest inventory. The instrument is based on Roe's occupational classification scheme. Norms were based on high school students considering post-secondary education and training.

LYNCH, K. P. Toward a skill-oriented prevocational program for trainable and severely mentally impaired students. In G. T. Bellamy, G. O'Conner & O. C. Karan (Eds.), *Vocational rehabilitation of severely handicapped persons*. Baltimore: University Park Press, 1979.

The purpose of this chapter is to suggest a model of vocational education for trainable and severely mentally impaired adolescents and young adults in mandated school programs.

LYTEL, R. B., JR. Aptitudes and self perceptions relating to the employability of the emotionally disabled. *Journal of Employment Counseling*, 1978, *15* 134-143.

Since diagnosis or standard psychological tests are poor predictors of successful vocational rehabilitation of emotionally disabled individuals, this author suggests that information regarding aptitudes and the individual's self perceptions (e.g., locus of control, realistic appraisal of limitations, values and skills) be included in the process of assessing employability.

MAKI, D. R., McCRACKEN, N., PAPE, D. A., & Scofield. A systems approach to vocational assessment. *Journal of Rehabilitation*, 1979, *45*(1), 48-51.

This article describes assessment as a component of comprehensive services. Included are discussions of assessment goals, selection of content areas, data collection, and individualized programming.

Maryland State Department of Education. *Vocational evaluation in Maryland Public Schools: A model guide for student assessment*. Baltimore, Maryland: Division of Vocational Technical Education, 1977.

The purpose of this model is to serve as a resource for communicating purposes, philosophy, and outcomes of the vocational evaluation process to professionals in the public schools and to the general public. It also provides information regarding the various concepts of the vocational evaluation programs. Sections include basis and development of the model.

McCARRON, L., & DIAL, J. *McCarron-Dial Work Evaluation System: Evaluation of the mentally disabled - a systematic approach*. Dallas, Texas: Common Market Press, 1976.

The purpose of this text is to present an empirically derived and systematic approach to work evaluation of the mentally disabled. Use of the McCarron-Dial Work Evaluation System with this population is discussed in detail.

McCARRON, T., & LUDLOW, G. C. Sensori-neural deafness and neuromuscular dysfunctions: Considerations for vocational evaluation and job placement. *Journal of Rehabilitation*, 1981, *47*(1), 59-62.

These authors suggest that a comprehensive vocational evaluation must contain measures of essential (e.g., job related) sensori-motor skills. For example almost half of the sensori-neural adolescents included in this study evidenced severe balance problems. These authors also suggest that a review of work trait characteristics given in the *DOT* can help identify jobs which require particular balance on visual tracking skills.

McCRAY, P. *The individual evaluation plan*. Menomonie, Wisconsin: University of Wisconsin - Stout, Stout Vocational Rehabilitation Institute, Materials Development Center, 1978.

The purpose of this publication is to help people directly involved with vocational evaluation understand why individual evaluation planning is important and how it may be effectively practiced. Individual evaluation planning is an essential component of a comprehensive vocational evaluation process. The I.E.P. provides a master plan of the purposes and objectives of an evaluation, a written record of the assessment techniques used, who was involved in carrying out the evaluation, and the extent to which specific goals were achieved. Most importantly, it insures that the unique needs of each individual client are given special consideration and that there will be an organized attempt to satisfy those needs in the most effective and efficient manner possible.

McCRAY, P. *Learning assessment in vocational evaluation*. Menomonie, Wisconsin: University of Wisconsin - Stout. Materials Development Center 1979. (ERIC Document Reproduction Service No. ED187881).

The purpose of this publication is to help vocational educators understand how the concepts of learning and performance related to vocational evaluation, why assessment is important, and how it may be incorporated into work sample testing.

MEISTER, R. K. Diagnostic assessment in rehabilitation. In B. Bolton (Ed.), *Handbook of measurement and evaluation in rehabilitation*. Baltimore: University Park Press, 1976.

This chapter discusses the purposes and procedures of assessment. The author discusses both short-term (interview and testing) and long-term (work sample and workshop) diagnostic procedures).

MEYEN, E. L., & LEHR, D. H. Evolving practices in assessment and intervention for mildly handicapped adolescents: The case for intensive instruction. *Exceptional Education Quarterly*, 1980, *1*(2), 19-26.

Intensive instruction is presented in this article as a means to assess the skills of mildly handicapped students. The author also discusses intervention techniques.

MICRO-TOWER. ICD Rehabilitation and Research Center, 340 East 24th St. New York, N.Y. 10010.

The Micro-TOWER is a group aptitude battery based on 13 work samples related to 9 specific aptituides in the DOT. The system uses a formal test format combined with group counseling.

MORRIS, J. For the retarded: Career counseling plus. *The School Guidance Worker*, 1974, *30*(2), 13-17.

This article describes some of the stereotypes associated with the retarded and slow learner which hamper career counseling and influence the career counselor.

NADOLSKY, J. M. The work sample in vocational evaluation: A consistent rationale. *Vocational Evaluation and Work Adjustment Bulletin, 1974*, *7*(2), 2-5.

This article discusses the rationale for the use of work samples in vocational evaluation programs.

NADOLSKY, J. M. Vocational evaluation in the public schools: Implications for future practice. *The Journal for Vocational Special Needs Education*, 1981, *3*(3), 5-9.

This article reviews the development of vocational guidance programs in public schools. Also discussed are conditions leading to the inclusion of special needs students in these programs and the role of vocational evaluation.

NEFF, W. S. Vocational assessment - theory and models. *Journal of Rehabilitation*, 1970, *36*(1), 27-29.

This author summarizes the traditional psychological meaning of assessment as a focus on the person. In work evaluation the examiner needs to include at least as much attention to the work situation as has been given to the individual.

NEFF, W. S. *Work and human behavior*. Chicago, IL: Aldine, 1977. (Available from: Walter DeGruyter, 200 Saw Mill River Road, Hawthorne, New York 10532).

Includes a section which covers the various techniques of work evaluation. The procedures and results of work evaluation are related to Neff's theory of the "work personality" which conceptualizes work behavior as the product of the interaction of the individual with his or her work environment.

NEWSON, R. S., & others. Evaluation of complex human performance: The promise of computer-based simulation. *Evaluation Quarterly*, 1970, *2*, 421-433.

For the training and placement of professional workers, multiple-choice instruments are the norm for wide-scale measurement and evaluation efforts. These instruments contain fundamental problems. Computer-based management simulations may provide solutions to these problems, appear scoreable and reliable, offer increased validity, and are better suited to performance measurement.

NIZIOL, U.M., & DeBLASSIE, R. R. Work adjustment and the educable mentally retarded adolescent. *Journal of Employment Counseling*, 1972, *9*, 158-166.

These authors note that occupational categories once the province of the retarded have decreased in part due to automation and mechanization. The article reviews research which has attempted to predict job success using rating scales, interviews and standardized tests. Research indicates that the Reading Free Interest Inventory (AAMD) might be useful while the Vocational Apperception Test and the Geist Picture Interest Inventory cover work areas beyond the reach of retarded clients.

NOLL, A. Certification of vocational evaluators in public school settings: A survey. *Vocational Evaluation and Work Adjustment Bulletin*, 1978, *11*(2), 18-21.

The present article addresses the functional identification and assessment of students with learning, behavioral, and physical problems. The proposed system offers an approach to the collection and use of learner identification, assessment, and evaluation information in special needs programs. Evaluative criteria are suggested for each component and component summaries are included.

PREDIGER, D. J. The marriage between tests and career counseling: An intimate report. *Vocational Guidance Quarterly*, 1980, *28*, 297-305. (ERIC Document Reproduction Service No. EJ225057).

The relationship between vocational tests and career counseling is improving. Counselors are making better use of tests which appear to be more responsive to counselors' needs in assessing clients. Measures of career planning progress and implications of trends for practitioners are discussed.

PRUITT, W. A. Basic assumptions underlying work sample theory. *Journal of Rehabilitation*, 1970, *36*(1), 24-26.

This article defines terms, presents basic assumptions and describes types of work samples. Also discussed is the rationale of work samples as they relate to vocational evaluation.

PRUITT, W. A. (Ed.). *Readings in work evaluation - I.* Menomonie, Wisconsin: Materials Development Center, Institute for Vocational Rehabilitation, University of Wisconsin - Stout, 1970.

The papers presented in this manuscript are intended to broaden the scope of literature in the field of work evaluation.

PRUITT, W. A. *Vocational (work) evaluation.* Menomonie, Wisconsin: Author, 1977. (Available from: Walt Pruitt Associates, Route 6, Menomonie, Wisconsin 54751).

The author's purpose in writing this book was twofold—first, to help define the professional specialty of work evaluation and secondly, to provide a textbook to assist in the training of work evaluation personnel. The content of the book deals with procedures, theory, and principles underlying vocational evaluation methods.

PRUITT, W. A., & LONGFELLOW, R. E. Work evaluation: The medium and the message. *Journal of Rehabilitation*, 1970, *36*(1), 8-9.

This guest editorial discusses common problems presented by clients referred for work evaluation. These include developmental problems, attitudinal problems, readiness problems and role problems.

QUINONES, W. A test battery for assessing the vocational competency of moderately mentally retarded persons. *Mental Retardation*, 1978, *16*(6) 412-415.

The major objective of this study was to develop a battery of tests which would predict the vocational competency of moderately mentally retarded people to function in a sheltered workshop program. The San Francisco Vocational Competency Scale was used as the criterion of vocational competency.

RASCH, C., & RASCH, J. A model for comprehensive short-term assessment. *Rehabilitation Counseling Bulletin*, 1978, *22*(1), 78-80.

Describes the Career Assessment Center, Madison, Wisconsin, which was established to improve the quality and efficiency of rehabilitation assessment for severely disabled clients. The facility offers an on-site, short-term, and comprehensive evaluation of rehabilitation potentials Assessment services are provided by a multi-disciplinary team, and client involvement is stressed throughout the evaluation process.

REVELL, W., & WEHMAN, P. Vocational evaluation of severely and profoundly retarded clients. *Rehabilitation Literature*, 1978, *39*(8), 226-231.

Discusses the application of traditional and alternative techniques of vocational evaluation to the severely and profoundly retarded and indicates that special consideration needs to be given to the evaluation of this population. Discusses the importance of distinguishing between acquisition and production in work sample performance.

REYNOLDS, W. J. The utility of multiple-choice tests formats with mildly retarded adolescents. *Educational and Psychological Measurement*, 1979, *39*, 325-331.

The results of this study indicated that students are able to respond appropriately to verbally presented two and three alternative multiple choice tests.

RICHTER-STEIN, C., & STODDEN, R. A. Simulated job samples: A student-centered approach to vocational exploration and evaluation. *Teaching Exceptional Children*, 1981, *14*, 116-119.

These authors propose that simulated job samples provide assessment information while giving students the opportunity for vocational exploration. The use of simulated activities, according to these authors, allows for expanded exploration and assessment activities which are developmentally meaningful to handicapped junior high school students.

ROBERTS, C. L. Definitions, objectives, and goals in work evaluation. *Journal of Rehabilitation*, 1970, *36*(1), 12-15.

This paper deals with two theory priorities: "goals and objectives" and "definitions of terms used." These topics evolved out of a 1969 Stout State University Conference on work evaluation.

ROSE, G. L., & BRIEF, A. P. Effects of handicap and job characteristics on selection evaluations. *Personnel Psychology*, 1979, *32*, 385-392.

This article discusses an experiment which studied the effects of being an epileptic or an amputee and the involvement of supervisory responsibilities in the job application process. Generally, handicapped applicants were evaluated no differently than normal applicants. Nevertheless, amputees were offered a smaller salary than normals.

SARKEES, M. D., & GILL, D. H. Vocational education's role in the comprehensive delivery of services to handicapped individuals. *Career Development for Exceptional Individuals*, 1981, *4*, 88-95.

This article describes vocational education programs in public schools and a service structure for handicapped students. The service configuration consists of: regular vocational education, adapted vocational education, special vocational education, individual vocational training, and prevocational evaluation services. Responsibilities of vocational educators are described under the headings of evaluation, goal development, instruction, and IEP evaluation.

SCHALOCK, R. L., & KARAN, O. C. Relevant assessment: The interaction between education and training. In G. T. Bellamy, G. O'Conner, and O. C. Karan (Eds.), *Vocational rehabilitation of severely handicapped persons.* Baltimore: University Park Press, 1979.

This chapter discusses the Rehabilitation Act of 1973 and the current state of the art relative to assessment techniques in reference to vocational evaluation. The chapter also has an excellent bibliography.

SCHOLL, G., & SCHNUR, R. *Measures of psychological, vocational, and educational functioning in the blind and visually handicapped.* New York: American Foundation for the Blind, 1976.

This manual was developed as a resource for psychologists, school psychologists, psychological examiners and rehabilitation counselors to guide in the selection of appropriate psychological, educational and vocational measures. General guidelines are presented and recommendations for the development of alternative assessment strategies are made.

SELIGMAN, L. *Assessment in developmental career counseling.* Cranston, RI: The Carroll Press, 1980.

This book was written to help counselors, psychologists, and teachers understand the lifelong process of career development. Its purpose is to assist professionals integrate counseling and assessment strategies.

SHELDON, K. L., & DuBOSE, L. Vocational assessment of the orthopedically handicapped. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students.* Blacksburg, VA: Virginia Tech, 1982.

This article reviews common effects of orthopedic handicaps on vocational development and vocational assessment. Particular attention is given to the uses and modification of traditional assessment techniques. In addition, an assessment model is proposed.

SHELTON, J. Vocational appraisal of the EMR adolescent: An exploratory study of a public school class. *The Journal of the International Association of Pupil Personnel Workers*, 1975, *19*, 156-158 & 205-207.

The present article examines the utility of the Vocational Interest and Sophistication Assessment (VISA) technique on 16 EMR males. Individual cases are also examined.

Singer Vocational Evaluation System. Singer Educational Division, Career Systems, 80 Commerce Drive, Rochester, New York 14623.

The Singer system consists of 24 self contained work stations designed to assess vocational interests, aptitudes, and training needs.

SITINGTON, P. L. Vocational assessment and the individualized vocational plan. *The Journal for Vocational Special Needs Education*, 1981, *3*(3), 27-29, 32.

This article suggests procedures for vocational assessments in public schools and relates these to the development of IVP's.

SITLINGTON, P., & WIMMER, D. Vocational assessment techniques for the handicapped adolescent. *Career Development for Exceptional Individuals*, 1978, *1*(2), 74-87.

In this article, each of the available assessment techniques is presented, its strengths and weaknesses discussed, and the types of information that can be gained through its use identified. Techniques discussed include job analysis, paper and pencil tests, commercially developed assessment systems, self-developed work samples, behavior analysis techniques, and situational assessment. The article is pointed primarily toward special education teachers who may not be familiar with the above techniques.

SOLLY, D. C. Prevocational assessment: Applications for elementary, middle, and junior high school students. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article describes the career development needs of younger students and recommends specific assessment techniques for each level and certain handicapping conditions. Specific emphasis is given to prevocational needs and way to obtain need information.

STODDENT, R. A., CASALE, J., & SCHWARTZ, S. E. Work evaluation and the mentally retarded: Review and recommendations. *Mental Retardion*, 1977, *15*(4), 25-27.

The use of work samples with retarded clients often results in questionable evaluation and job placements according to these authors. This article reviews commonly used batteries and offers a critical analysis.

TELLEFSEN, D. J. Comprehensive vocational/career assessment of emotionally disturbed adolescents and adults. In T. H. Hohenshil and W. T. Anderson (Eds.), *Secondary school psychological services: Focus on vocational assessment procedures for handicapped students*. Blacksburg, VA: Virginia Tech, 1982.

This article overviews vocationally relevant characteristics of emotionally disturbed students and describes the process of vocational evaluation for this population.

Testing Orientation Work Evaluation in Rehabilitation. ICD Rehabilitation and Research Center, 340 East 24th St., New York, New York 10010.

Uses 94 work samples across 14 occupational areas. The samples are related to specific jobs and are based on job tasks analysis.

TODD, N., & BELLAMY, T., & LEITER, M. Behavioral observations for work situations: Coding definition manual. In G. Bellamy (Ed.), *Habilitation of severely and profoundly retarded adults*. Eugene, Oregon: University of Oregon, Center on Human Development, Rehabilitation Research and Training Center in Mental Retardation, 1976, 109-118.

Describes procedures for observing and coding behavioral events in a workshop or other work setting employing severely handicapped adults. The coding system applies naturalistic observation technqiues to vocational assessment and evaluation by recording the behavior of a worker or trainee, his or her productivity, and events in the surrounding environment. The system is designed to supply ongoing data which will assist in operationally defining the objectives of habilitation programs and provide evaluative data relative to attainment of these objectives.

TOWNSEND, J. W., PRIEN, E. P., & JOHNSON, J. T., JR. The use of the Position Analysis Questionnaire in selecting correlates of job performance among mentally retarded workers. *Journal of Vocational Behavior*, 1974, *4*, 181-192.

The results of this study indicated that existing measures (e.g., WAIS, Vineland Social Maturity Scale, and the Purdue Pegboard) are predictive of performance on some but not all jobs in a sheltered workshop.

U.S. Department of Health, Education, and Welfare. *Vocational evaluation and work adjustment services in vocational rehabilitation*. Tenth Institute on Rehabilitation Services, Menomonie, Wisconsin: University of Wisconsin - Stout, Department of Rehabilitation and Manpower Services, Materials Development Center, 1972. (Available as: Materials Development Center Reprint Series No. 8).

The above was the subject area for the Tenth Institute on Rehabilitation Services which was held May, 1972. The publication is primarily intended as a guide to provide assistance to the rehabilitation counselor in making appropriate selection and use of vocational evaluation and work adjustment programs. Subjects covered include definitions and descriptions of the vocational evaluation and work adjustment processes, reporting on client progress, personnel qualification in the facility, mutual responsibilities between the DVR counselor and facility personnel, and cost of evaluation and work adjustment services.

Valpar Component Work Sample Series. Valpar Corporation, 3801 East 34th St., Tucson, Arizona 85713.

The Valpar is a series of 16 work samples designed to evaluate client aptitudes.

VANDERPLOEG, A. J., & MUELLER, S. G. An examination of the armed services vocational aptitude battery, *Measurement and Evaluation in Guidance*, 1978, *11*(2), 70-77. (ERIC Document Reproduction Service No. EJ186420).

ASVAB, a vocational aptitude battery designed by the Dept. of Defense and being offered to high schools at no cost, is examined. The instrument is found to fall short of the claims made for it, but the test may be useful for certain purposes.

Vocational Information and Evaluation Work Samples. Vocational Research Institute, Jewish Employment and Vocational Service, 1624 Locust St., Philadelphia, PA 19103.

The VIEWS system utilizes 16 work samples related to 4 worker trait groups drawn from the DOT. It is intended to provide comprehensive evaluations of mentally retarded clients.

WALLS, R. T., TSENG, M. S.,& ZARIN, H. N. Time and money for vocational rehabilitation of clients with mild, moderate, and severe mental retardation. *American Journal of Mental Deficiency*, 1976, *80*, 595-601.

The results of this study indicate that the largest amounts of service time and money went to non-rehabilitated subjects.

WALLS, R. T., & WERNER, T. J. Vocational Behavior checklists. *Mental Retardation*, 1977, *15*(4), 30-35.

This article reviews thirty-nine behavior checklists containing items related to pre-vocational, vocational; occupational and work behaviors.

WALLS, R. T., ZANE, T., & WERNER, T. *Vocational behavior checklist*. Morgantown, West Virginia: West Virginia University, Research and Training Center. 1978

The *Vocational Behavior Checklist (VBC)* is an evaluation device for assessment of client work skills, training needs, and effectiveness of training itself. It includes 339 relevant specific vocational skills identified within classes, sequences and organized for use in an individual's development and acquisition of vocational skills. The instrument uses criterion reference rather than norm reference to assess a client's vocational progress. In criterion reference, skills are listed in specific terms so that it can be determined whether or not an individual client has mastered these skills. The skill objective of the BVC are divided into the following seven classes: 1) Prevocational skills, 2) Job seeking skills, 3) Interview skills, 4) Job-related skills, 5) Work performance skills, 6) On-the-job social skills, and 7) Union/financial/security skills. A skill summary chart set allows the recording of client behaviors in initial assessment as well as in training as it progresses. A skill objective profile sheet shows overall status of strengths and weaknesses by plotting information derived from the skill summary charts.

ZYTOWSKI, D. G. The effects of being interest inventoried. *Journal of Vocational Behavior*, 1977, *11*, 153-157.

This study investigated the results of receiving the results of the Kuder Occupational Interest Survey on vocational behavior. Receiving results increased self knowledge, but did not affect confidence or satisfaction with vocational plans or information seeking.

APPENDIX D

Vocational/Secondary School Psychology
(Selected References)

VOCATIONAL/SECONDARY SCHOOL PSCYHOLOGY

(Selected References)

Developed By:
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Vocational School Psychology

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BARBER, R. M. Vocational assessment procedures for handicapped students: A generic approach. In T. H. Hohenshil and W. T. Anderson (Eds.), *School psychological services in secondary vocational education: Roles in programs for handicapped students*, Blacksburg, VA: Virginia Tech, 1981.

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DONOHUE, K. Career education for the handicapped: The vocational school psychologist as consultant. *The School Psychology Digest*, 1978, 7, 55-59.

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